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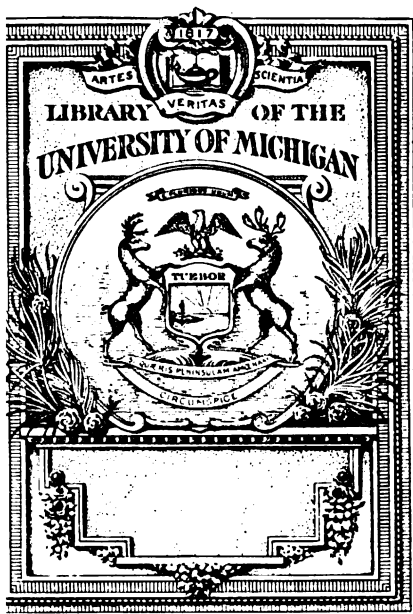
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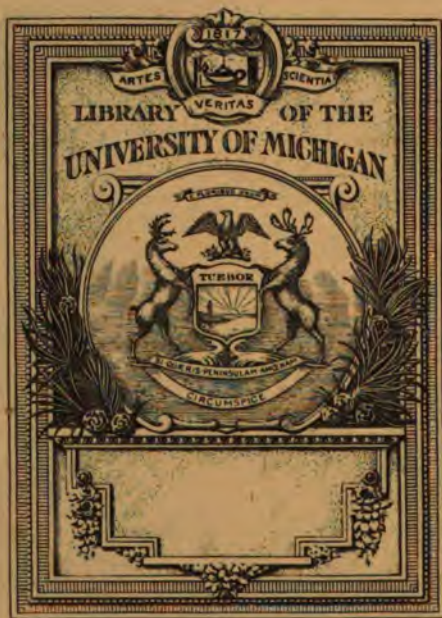
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GENERAL VIEW
OF
THE AGRICULTURE
OF THE
HEBRIDES,
OR
WESTERN ISLES OF SCOTLAND:
WITH
OBSERVATIONS ON THE MEANS OF THEIR IMPROVEMENT;
TOGETHER WITH A SEPARATE
ACCOUNT OF THE PRINCIPAL ISLANDS;
COMPREHENDING
THEIR RESOURCES, FISHERIES, MANUFACTURES,
MANNERS, AND AGRICULTURE.
DRAWN UP UNDER THE DIRECTION OF
THE BOARD OF AGRICULTURE.
WITH SEVERAL MAPS.

BY JAMES MACDONALD, A. M.

*Nihil Agricultura melius: sola res rustica, quae sine dubitatione proxima et quasi contermina
sapientiae est, tam discentibus agant quam magistris. — Columella.*

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CONTENTS.

	Page
INTRODUCTION	1
CHAP. I. GEOGRAPHICAL STATE AND CIRCUMSTANCES	7
SECT. 1. Situation and extent	ib.
2. Divisions	8
3. Climate	11
4. Soil	16
5. Minerals	29
6. Waters	53
CHAP. II. STATE OF PROPERTY	60
SECT. 1. Estates and their management	ib.
2. Tenures	71
CHAP. III. BUILDINGS	81
SECT. 1. Houses of proprietors	ib.
2. Farm-houses and offices	84
3. Repairs of ditto	90
4. Price of building materials, &c.	91
5. Cottages	94
6. Bridges	96
CHAP. IV. OCCUPATION	100
SECT. 1. Size of Farms	101
2. Farmers	107
3. Rent	115
4. Tithe	124
CHAP.	

	Page,
CHAP. IV. SECT. 5. Poor-rates and other parochial	
taxes - -	125
6. Leases - -	128
7. Expences and profit -	136
CHAP. V. IMPLEMENTS -	150
SECT. 1. Caschrom -	151
2. Ristle or sickle plough -	156
3 Clow-maite, or wooden tongs -	157
4. Harrows - -	158
5. Raaken, or clod-breaker -	159
6. Jarunn-moine, peat spade -	160
CHAP. VI. INCLOSING -	163
CHAP. VII. ARABLE LAND -	174
SECT. 1. Tillage - -	ib.
2. Fallowing -	190
3. Course of crops -	ib.
4. Wheat - -	195
5. Rye - -	ib.
6. Barley - -	196
7. Oats - -	209
8. Peas - -	214
9. Beans - -	215
10. Turnips - -	216
11. Cole-seed and cabbages -	227
12. Roota-baga, or Swedish turnips -	228
13. Carrots - -	232
14. Potatoes - -	ib.
15. Clover, red, &c. -	260
16. Ray, or rye-grass -	271
17. Hemp - -	276
18. Flax - -	291
CHAP. VIII. GRASS LAND -	306
SECT. 1. Meadows - -	ib.
2. Pastures - -	309
CHAP.	

CONTENTS.

	Page.
CHAP. IX. GARDENS AND ORCHARDS	319
CHAP. X. WOODS AND PLANTATIONS	321
SECT. 1. and 2.	321—327
3. Plantations	328
4. Timber	353
CHAP. XI. WASTES	361
SECT. 1. Moors	362
2. Mountains	364
3. Bogs	366
4. Fens and marshes	367
CHAP. XII. IMPROVEMENTS	377
SECT. 1. Draining	ib.
2. Paring and burning	386
3. Manuring	387
4. Irrigation	413
CHAP. XIII. EMBANKMENTS	414
CHAP. XIV. LIVE STOCK	420
SECT. 1. Cattle	422
2. Sheep	446
3. Horses	468
4. Asses	484
5. Hogs	485
6. Rabbits	488
7. Poultry	489
CHAP. XV. RURAL ECONOMY	492
SECT. 1. Labour	ib.
2. Price of provisions	501
3. Fuel	502
CHAP. XVI. POLITICAL ECONOMY	511
SECT. 1. Roads and Canals	520
2. Fairs	525
3. Weights and Measures	ib.

	Page.
SECT. 4. Price of Products compared with	
Expences	527
5. Manufactures	529
6. Commerce	536
7. Fisheries	538
8. The Poor	539
9. Population	543
CHAP. XVII. OBSTACLES TO IMPROVEMENT	557
CHAP. XVIII. MISCELLANEOUS ARTICLES	561
SECT. 1. Agricultural Societies	ib.
2. Provincial Terms	563
CONCLUSION.—Means of Improvement, and the	
Measures calculated for that	
purpose	567
Tenure of lands	568
Farms, buildings, and inclosures	570
Agricultural implements	571
Manures	573
Cultivation, or tillage	575
White crops	577
Green crops	580
Grass	582
Live stock	588
Woods and plantations	591
General measures, or police	593

APPENDIX,

Comprehending an Account of the following Isles separately, viz.

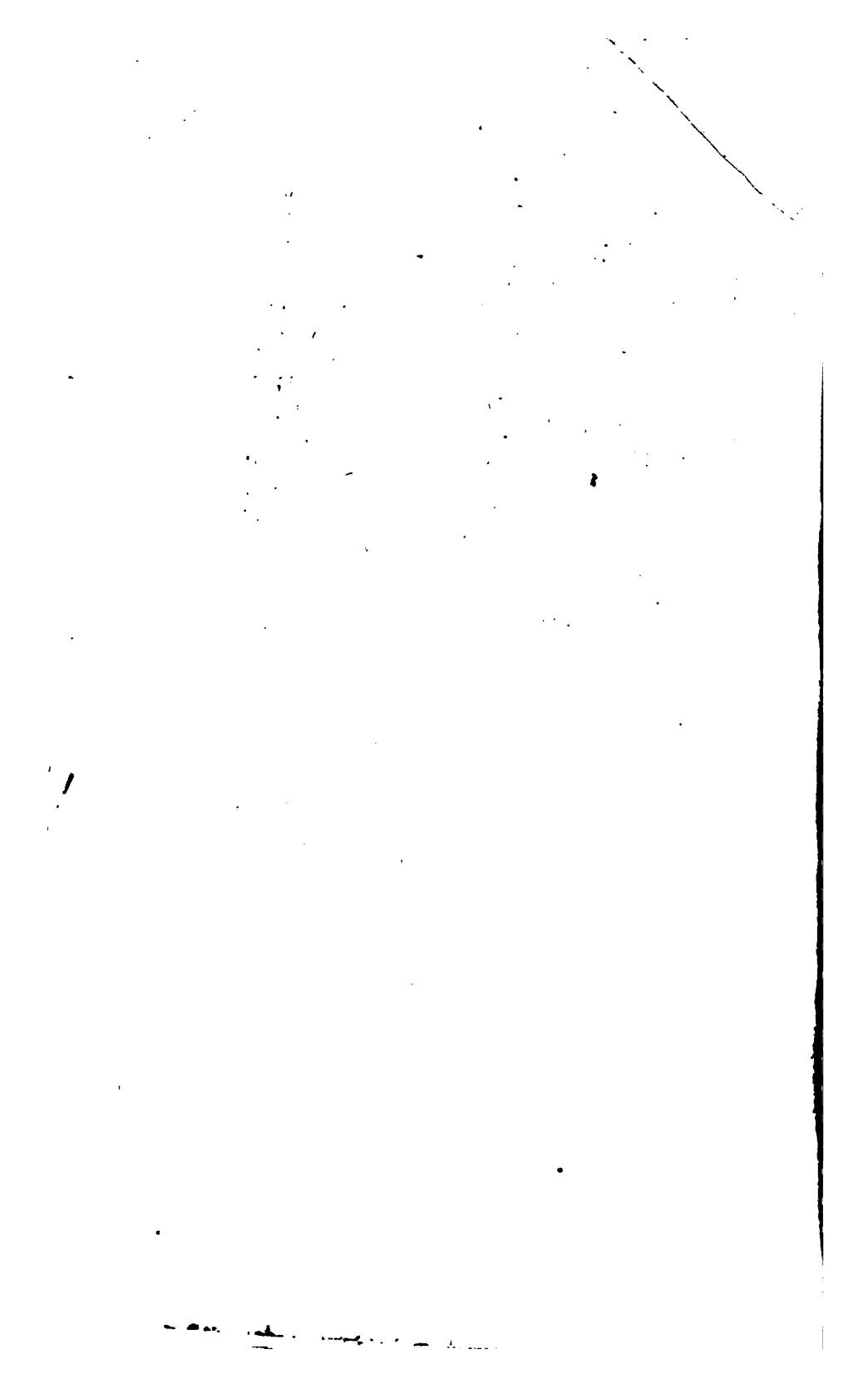
1. Gigha	604
2. Islay	612
3. Collonsay and Oronsay	638
4. Jura	653
5.—8. Scarba, Lunga, Luing, Shuna, and Saol	664

CONTENTS.

vii

9. Eisdale	-	-	-	665
10. Kerreray	-	-	-	668
11. Müll	-	-	-	669
12. Ulva, Gometra, &c.	-	-	-	687
13. Iona; or Icolmkill	-	-	-	690
14. Staffa	-	-	-	711
15. Tyree	-	-	-	719
16. Coll	-	-	-	725
17. Lismore	-	-	-	733
18. Monk, or Muck	-	-	-	735
19. Eigg	-	-	-	736
20. Rum	-	-	-	739
21. Cannay	-	-	-	743
22. Skye, Raasay, and Ronay, &c.	-	-	-	746
23. Barray, Uists, and Benbecula	-	-	-	779
24. Harris and Lewis	-	-	-	805
25. St Kilda, or Hirt	-	-	-	815

THE



THE
HEBRIDES;

OR,

WESTERN ISLANDS OF SCOTLAND.

THE early history of the HEBRIDES is involved in thicker darkness than that of any neighbouring region. These islands were successively over-run by different tribes from the continents of Scotland and Ireland, and by the northern rovers of Scandinavia. The ancient tales and traditions of the natives, which constitute the existing historical documents of this district, constantly refer to these eruptions; but they yield little that can be relied upon.

The natives are evidently of the same stock with the inhabitants of Ireland and of the Highlands of Scotland: Their language, manners, superstitions, and cus-

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toms

toms are the same. The tribes who settled among them in consequence of the Scandinavian conquests, between the 9th and 12th centuries, were few in number in comparison with the population of the country, and were speedily absorbed by the native race.

The first written accounts which we have of the Hebridians, occur in the Chronicle of Mann; and these are scanty and confused; nor indeed is the loss of their history of much consequence during the latter periods, (or even from the reign of Alexander III.) when they were finally annexed, by a specific agreement, with the Scottish Crown. What we regret most is the loss of their annals during the æra of the introduction of Christianity and the age which preceded it, as well as that of their connexion with the Roman transactions in Britain.

That these extensive regions were at some former epoch possessed of a considerable population, and of resources far beyond what is commonly supposed, we may learn from the monuments of antiquity still visible in them. Castles built with astonishing skill in the midst of deep lakes; immense pillars of stone, plainly indicating the aid of mechanical powers to raise them, and the command of great numbers of men to carry them over ground impervious to cattle used for draught; watch-towers erected in places which, in point of judgment of selection, astonish the ablest engineers of modern times, and formed a regular chain of telegraphic communication; ruins of houses and of temples discovered deep under the present surface of the soil, or within the sea mark in some of the lower isles, and referring consequently to a remote antiquity; all these
announce

announce a degree of power, of wealth, and of civilization totally incompatible with the ideas usually adopted with respect to the ancient history of the Hebrides. But this is not all. The language, superstitions, proverbs, and modes of thinking, general throughout these isles, evince ancient eminence. Their poetry is lofty and pathetic, replete with noble sentiments, and founded upon the historical associations of an illustrious race. It carries us back to a period in which "The kingdom of the Innsegallians (as they delight to call themselves) was the pride of its allies, and the terror of its foes; when the kings of the north, and the masters of the great world, fled away discomfited and terrified from its arms; and when the bravery of its heroes, and the virtues of its subjects, were the theme of the historian and song of the bard *." Such sentiments we find even at this day universal throughout the western isles; and they carry to the unbiassed mind, upon a controversy lately agitated with much heat and intemperance, a degree of conviction which no sophistry can shake and no eloquence can overturn †.

In consequence of the removal of the seat of government from Dunstaffnage, Inverlochry, and the western coast of Scotland, to the eastern counties of Perth, Fife, and Mid-Lothian, the Hebrides were deprived of the

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immediate

* Vid. Sean-dana, a work published 50 years ago by Alexander Macdonald of Eigg, in Gàlic, now out of print.

† Vide Johnson's Journey to the Hebrides and Mr Laing's Dissertations on the Poems of Ossian.

immediate protection of their princes, and left to the capricious and arbitrary despotism of their chiefs. The chiefs carried on perpetual wars against one another, and these too of the most rancorous kind, being frequently founded on family or personal feuds. Neither the sanctity of religion, nor the claims of humanity were respected. The Scottish monarchs, too feeble and too distant to punish the more powerful chiefs, adopted the miserable policy of managing them by setting one of themselves against the other, and of offering the property of the vanquished to his more successful antagonist. To this antagonist another chief was soon opposed, who in his turn, whether victorious or unsuccessful in the first instance, seldom escaped the violent fate of his neighbouring chief. This was the state of the Hebrides from the accession of Alexander III. till the beginning of the 18th century, when, in consequence of the union of England and Scotland, and some circumstances favourable to the admission of young Hebridians of influence into the British army and navy, the blessings of a regular government, and the refinements of civilized society were gradually introduced.

It was not, however, until the year 1748, that the Hebrides could be said to enjoy the complete security which results from an equitable and a powerful government*. The abolition of the heritable jurisdictions
conveyed

* Sir John Dalrymple's admirable sketch of the common Highland and Hebridian character, does not militate against this fact. Individual heroism and personal greatness are so far

conveyed to their inhabitants the full privileges of British subjects ; and if they have not since that period been so well governed as other portions of our empire, the cause is not to be looked for in any neglect or injustice of the legislature, but in circumstances of a local nature, which it will require much time and powerful exertions to remove.

These circumstances are, the disjointed, unconnected, geographical state of the Western Islands, their great distance from cities and markets, the immediate nurses of wealth and of refinement, the difficulty of intercourse on account of the boisterousness of the seas around them, and the storms which so frequently prevail during nine months of the year ; but above all, the non-residence of many of the proprietors, who drain the poor Hebrides of their wealth, and, too often, residing in other parts of the empire, pay little attention to the improvement of their estates.

Whoever weighs these considerations, and many others of a collateral nature, but which are so obvious that it is unnecessary to mention them, will not be surprised to find the Western Islands of Scotland so far

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back

far from being incompatible with an agitated state of society, that we rarely find them in any other. The Persian attacks upon the West produced a Leonidas ; the struggles of infant Sparta, a Lycurgus ; the civil wars of Greece, a Demosthenes ; those of Rome, a Caesar and a Cicero ; and the most tempestuous years of the British history, the noblest of European characters. In like manner, the feuds of the clans raised up heroes ; but, at the same time, they kept their country in distress.

back in improvements as they are at present ; but, on the contrary, he will wonder how they can, under such disadvantages, supply the stock and support the population which they now contain.

The following report, drawn up by a native, for the consideration of the Board of Agriculture and of Internal Improvement, is the result of seven voyages and journies at different periods since 1793, among these isles, and particularly of a journey of more than 2900 miles through them, in the months of May, June, July, August, and September 1808. He is sure that it is impartial, and he hopes it may be useful. The indulgence of the Board will in his case be but candour ; for where the task is arduous, and the means of performance scanty, mediocrity is unavoidable and natural, and to escape censure is positive praise.

CHAP.

CHAPTER I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECTION I.—SITUATION AND EXTENT.

THE Hebrides or Western Islands of Scotland, amounting to nearly 200 in number, lie scattered in the Atlantic, opposite to the western coast of that part of the British kingdom, between $55^{\circ} 35'$ and 59° of north latitude, and 5° and 8° of longitude west from Greenwich. They shelter the whole western coast of Scotland from the fury of the Atlantic Ocean, and seem to have once been connected with that coast, but disjoined by the encroachments of time and of the elements.

The small islands and holms, which contain nothing particularly remarkable, we pass over in silence, and include them in the larger islands to which they are attached. They amount in number to about 160, of which one-fourth are sometimes inhabited in the summer season,

season, but uninhabited the rest of the year, and comprehend at least 40,000 acres of surface.

In superficial extent the Hebrides rather exceed 3,184 square miles, or 1,592,000 Scotch, or 2,037,760 English statute acres, nearly one-twelfth of Scotland, or one thirtieth of Great Britain. They are larger than Corsica or the Republic of Holland, and than any county in Great Britain excepting Yorkshire and Inverness*.

They are more populous and fruitful than the same extent of the highlands of Scotland, or even of Northumberland, Cumberland, and Westmoreland, in their mountainous districts; and amount pretty nearly to their size of all Scotland in real value.

SECTION II.—DIVISIONS.

THESE islands (constituting *Thirty-one Parishes*, as under written †) are usually classed with reference to their

* The surface of these isles is so rugged and mountainous that we might add a seventh part more than the plane of the base as the real measurement of the superficies; but we rather abide by the plane as measured for the construction of a map.

† Viz.

- | | |
|---------------------|---------------------|
| 1. Barary | 4. Cumbræes |
| 2. Barvas (Lewis) | 5. Diurinish (Skye) |
| 3. Bracadale (Skye) | 6. Gigha and Cara |

7.

their latitude, relatively to Scotland, into two grand divisions, the Southern and Northern Hebrides; and both divisions are distinguished by their size into first, second, and third rate islands.

The first rate isles of the southern division are Islay, Mull, Arran, and Jura; and of the northern, Skye, Lewis, and Harris, and the island of Uist. These contain 2846 square miles, or 1,423000 Scots acres, and are, to the smaller isles, as $8\frac{1}{2}$ to 1.

The promontory of Ardnamurchan, the most westerly point of the British continent, is understood to form the line between the southern and northern Hebrides.

The

-
- | | |
|-------------------------|-----------------------|
| 7. Harris | 20. Portree (Skye) |
| 8. Jura | 21. Rothesay (Bute) |
| 9. Kilbride (Arran) | 22. Sleat (Skye) |
| 10. Kilmorie (Arran) | 23. Small Isles |
| 11. Killarow | 24. Snizort (Skye) |
| 12. Kilchoman } (Islay) | 25. Stornoway (Lewis) |
| 13. Kildalton | 26. Strath (Skye) |
| 14. Kilfinichen (Mull) | 27. Tyree and Coll |
| 15. Kilmuir (Skye) | 28. Torosay (Mull) |
| 16. Kilninian (Mull) | 29. Uig (Lewis) |
| 17. Kingarth (Bute) | 30. Uist, North |
| 18. Lismore | 31. Uist, South. |
| 19. Lochs (Lewis) | |

The isles of secondary size are,

South.

North.

Bute,
Cumbraes,
Gigha and Cara,
Collonsay,
Lismore,
Tyree,
Coll,
Ulva and Gometra,
Kerrera, y,
Luing,
Seil, or Saoil.

Eigg,
Rum,
Raasay and Islets,
Rona,
Barra y and Islets.

The isles of third rate size are,

South.

North.

Scarba,
Lunga,
Shuna,
Icolmkill, or Iona.
Eisdale,
Inch Kenneth,
Staffa.

Muck, or Monk,
Cannay,
St Kilda, or Hirt,
Ascrib,
Fladday.

The southern isles of Bute and Arran constitute the county of that name; the other southern isles belong to the shire of Argyle, except the Cumbraes, which are attached to Lapark or Renfrew. Lewis is a part of Ross-shire; Monk, Rum, and Cannay, of Argyle-shire; and all the other northern isles are attached politically to the county of Inverness.

Between the years 1764 and 1771 the late Dr Walker found 96 of the Hebrides inhabited; but it appears

pears that many of them are now deemed to yield more advantage by being depopulated ; for we have only met with houses on 87 of them in 1808, and of these only 79 are regularly peopled all the year round. Their population will be given in its proper place.

SECTION III.—CLIMATE.

1. *Prevalent Winds.*

Westerly winds prevail for 8 months at an average every year. The most furious storms which blow, are almost always from the south west ; and their effects are plainly discernible in the appearance of the islands. Where the soil is sandy, it is continually receding from that quarter, and threatens to leave nothing, in the course of ages, but the rocky skeletons of the hills. Where the ground is hard, the blasted grass and bare-worn rocks announce the rage of the western or Atlantic hurricanes. The same wind brings deluges of rain almost annually from the month of August till the beginning of March. Early in March, and often also in the months of October and November, a stubborn north east, or north north-east wind prevails : but although the coldest that blows here, it is generally dry and pleasant. Due north and south winds are not very frequent,

frequent, and rarely last for more than two or three days at a time. The month of March is frequently cold, * with easterly winds accompanied by great drought.

Agricultural operations are rarely impeded during that important month by any other causes than the weakness of horses and cattle, and the attention which the farmer must exclusively pay to them, and to his young stock.

However variable and fluctuating the climate of the Hebrides may appear, and it certainly partakes in an eminent degree of the precariousness and instability of the British climate in general, yet experience proves that it is far from being unfavourable to the human constitution. Instances of longevity are as frequent as in any portion of Europe of the same population; and what is pleasant to observe, diseases formerly reckoned peculiarly prevalent here, are gradually losing their malignant and epidemical symptoms. This may be partly imputed to the progressive improvements of the natives in cleanliness, and the comforts of polished life; but it is at the same time a proof that the climate is not hostile to such comforts and improvements.

2.

* A proverbial saying in the Hebrides alludes to this circumstance, " Bheiridh I air a ghaoith luath Mháirt a bhidh roidhe; agus cha bheiridh a ghaoith luath Mháirt a bhidh na deoghaigh orra," i. e. " She (Fingal's ship) overtook the keen March wind before her, but the keen March blasts could not overtake the ship."

2. *Quantity of rain that falls.*—As no regular meteorological tables are any where kept, this point cannot be exactly ascertained at present. It is probable that in the higher isles of Arran, Jura, Mull, Skye, and Harris, the quantity of rain equals that which falls at Greenock, *i. e.* from 30 to 36 inches annually; while the lower isles of Tyree, Coll, north Uist, and Lewis, are as dry as any part of western Scotland.

3. Meteorological remarks of any kind are rarely made in the Hebrides; and we could find none upon which any reliance can be placed.

The climate is upon the whole much milder than might be expected, in the high northern latitudes of from 56° to 59°, owing to the islands being indented by arms of the sea in such a manner that no spot can be pointed out in any of them, even the most extensive, Lewis, Skye, and Mull, which lies 7 miles from the sea shore.

To this cause, and to the circumstance of the cultivated fields being nigh to the coast, and near the level of the sea, may be attributed the early ripening of grasses and corn in the Hebrides. Sown hay is cut in the southern isles in the latter end of June, and till the middle of July, and in the northern isles during the month of July: and barley is often cut down ripe in all of them in August, and the whole crops secured in September. We have this year seen bear or big cut down in Uist, Lewis, and Tyree, within 10 weeks of its sowing.

Natural hay is late, and can seldom be secured before the autumnal rains set in.

The

The great mass of the population resides within an English mile of the sea shore. The traveller meets with scarcely one inhabited house in the Hebrides 1000 yards from the sea mark, or 300 feet above the level of the Atlantic Ocean.

Snow and frost are almost unknown in the smaller isles, and they seldom incommode the larger in any considerable degree. The labours of husbandry are rarely interrupted by frost; or if in severe seasons they may happen to be suspended for some days, the delay is soon at an end, and the usual temperature of the air is restored. We have never known the thermometer fall more than 5 degrees below the freezing point near any house in the Hebrides. There will be no danger therefore of turnips, roota-baga, cabbages, clovers, or any other winter crop being lost by the severity of the weather: an inducement additional to many others which will be afterwards suggested for the cultivation of green crops in these islands.

The medium temperature of springs is 44° .

The climate must of course vary greatly in the inhabited regions, and in the higher vallies, or on the summits of the mountains. Some of these last are of considerable height compared with the mountains of Britain, though trifling and insignificant were they situated amidst the Alps or the Cordillera de los Andes. Several of them are higher than any in England.

The mountains of Arran, Jura, Mull, and Skye are the highest, and fluctuate between 2600 and 4000 feet of perpendicular height above the Atlantic. These hills modify the climate in their neighbourhood, and shelter or expose the adjacent districts according to the direction

direction of the winds. They often also affect or influence the local direction of the winds themselves, and occasion various phenomena which astonish the mariner who is unaccustomed to sail amidst mountainous regions.

The diseases most frequent among the Hebridians, are rheumatisms, fevers, pleuresies, cutaneous eruptions, and such other distempers as are the usual concomitants of poor living, and of inattention to cleanliness. The substitution of linens instead of woollens has made rheumatisms perhaps more common than they formerly were; but the other diseases above mentioned become annually less frequent and dangerous.

The clearest evidence of the climate's being mild and salubrious, is the fact, that every parish, and almost every island, have nearly doubled their population within the last 60 years. This pleasing fact cannot be imputed solely and entirely to the general introduction and use of potatoes, or the practice of inoculation for the small pox, although these may have powerfully contributed to the effect; for that root has become universal, and constitutes two-thirds of the food of the common classes in other parts of Europe, where also inoculation has been long practised, and no similar increase of population has by any means followed. Nor can it be attributed to the introduction of manufactures, of agricultural improvements, or any other artificial means of subsistence and of health exclusively; these, as well as the science and practice of medicine, are farther back here than in any other portion of the British empire. Much must unquestionably be allowed for the purity of the air, and the general salubrity
of

of the climate; advantages which counterbalance. in the estimation of the philanthropist, the numerous inconveniences resulting from local seclusion to which the natives are subjected. The air and climate are indeed so wholesome, that were their other natural resources turned to account, they would place them on a par, in point of solid happiness, with the inhabitants of the finest countries of the world*.

SECT. IV.—SOIL.

In a region so extensive as the space occupied by the Hebrides, 240 miles in length, and betwixt 60 and 100 miles in breadth, a great diversity of soils and of surfaces may be expected. We accordingly find an immense

-
- * The mountayne men live longer manie a yeere,
 - Than those in vale, in playne, or moorish soyle;
 - A lustie hart, a clean complexion cleere,
 - They have on hill that for hard living toyle.
 - With ewe and lambe, with goates and kids they play,
 - In greatest toyles to rub out wearie day;
 - And when to house and home good fellows drawe,
 - The lads can laugh at turning of a strawe.

Church-yard.

mense variety of both, not only in the different and distant islands, but also in the same island and in the same parish; for nature, always delighting in variety, seems to have stamped upon these sequestered portions of her workmanship peculiar marks of her disposition for capricious versatility and for astonishing contrasts.

Were a stranger to give his opinion from a cursory inspection of these isles, respecting their soil and productions, we should not be surprised to find it extremely different from that of a native who is thoroughly acquainted with the country, and has enjoyed opportunities of comparing it with other districts of Britain, and of Europe. The state of total neglect in which several isles have remained for ages, and from which most of them are but just emerging; the scarcity of timber; the broken and desultory system of tillage hitherto followed, and the want of draining and inclosures, convey a very unfavourable idea of their soil and surface. But, upon a closer inspection, we gradually change our opinion. We find, on examination, in many parts of the Hebrides, as fertile a soil, and as varied and beautiful a surface, (making allowance for the want of wood,) as in any portion of the British island: and the stranger will express his regret, not because nature has done little, but because art and man have almost done nothing.

Let the traveller who inveighs against Jura, "that mass of weather-beaten barrenness*," or against "the obtruding sterility of the stormy, cloud-envelopped
B Rum,"

* Pennant's Tour.

Rum *," take a view of Islay from the mouth of Loch-in-Daal, or of Skye from Mogstadt or Duntulm; he will not fail to acknowledge the bounty and riches of nature, while he loudly declares that he loves her beauty, and adores her magnificent works.

Every variety of soil known in Scotland occurs in the Hebrides. These varieties it is not easy to enumerate in intelligible language; for it is one of the greatest obstacles to the acquisition of agricultural science, that the nomenclature of the objects connected with it, is as yet confused and unprecise. Soil, strictly speaking, is the ground or earth in which crops of every kind are produced, and its component parts, whatever may be the colour, are argill, sand, water, and air; into these original principles all earths may be reduced, however blended with apparently foreign substances. Argill is the soft, unctuous part of clay; the primitive earths, argill and sand, contain each, perhaps in nearly equal degrees, the food of plants; but in their union the purposes of vegetation are most completely answered. On these subjects we can only state facts; the reasons or causes are beyond our reach. How numerous indeed, and how diversified, are the sentiments of theorists concerning the food of plants! Do they forget that the subject cannot be comprehended by the human mind in its present state, and that their speculations display only their own presumption and their ignorance? It is a certain truth, that the most acute philosopher can no more account for the germination of a single grain
of

* Anonymous, anno 1806.

of corn, than he can explain the mysterious manner in which he enjoys rational existence.

Although the theory of agriculture, with reference to the nature and properties of soils and of their fruits, must thus for ever remain imperfect, yet we believe that a degree of certainty is already obtained concerning the real and efficient explanation of the art, sufficient to guide the conduct of those who are engaged in carrying it on, and competent to all the purposes of usefulness to our species. If the earth is enriched or stimulated by proper manures, drained of superfluous waters, but prevented from being parched up; and if the soil is sufficiently cultivated, and kept clear of weeds; and if it be inclosed and sheltered from the storms; all that man can do is performed for bringing to perfection her vegetating powers.

Much, however, depends upon the judgement and skill displayed in these apparently simple operations; and we find, that in most parts of the extensive region to which our remarks more immediately refer, reason and practice are almost continually at variance. In order to have a clear conception of the soils of the Hebrides, as far at least as is necessary for our purpose, we shall mention the larger isles in their order northward, with the predominating character of their surface, the smaller ones in their vicinity bearing a considerable degree of similarity to them both in soil and external appearance.

1. *Arran*.—The soil is in general thin, light, friable mould, upon gravel, rock, or till, and is the decomposition of schistus, basalt, and granite. This soil as well

as the few pieces of peat-moss ground which have been improved, is scourged by a constant course of cropping with oats and bear or bigg, with no alternation of leguminous or green crops, excepting potatoes. Both soil and climate invite to a different system; but ignorance and prejudice follow the old course. Some few symptoms of improvement, however, begin to appear.

2. Bute.—The soil is clay, loam, clay and sand upon till, or improved moss upon gravel. In the neighbourhood of Rothesay, and of Mount Stewart, as well as on some parts of the Kames estate, a pretty regular and scientific mode of cultivation is adopted. Green crops are partially introduced. Barley is not succeeded by oats, and oats by barley, as heretofore; but barley and grass seeds are succeeded, 1. by hay, and 2. pasture,—then, 3. by oats,—4. by turnips, or pease, potatoes, or beans,—5. by barley or wheat,—and, 6. by hay, and to recommence. The isle of Bute is however but in the infancy of rational agricultural improvement, especially in what regards draining and inclosing. The soil is excellent, and capable perhaps of being turned to the highest account of all the isles.

Islay.—Thirty-six square miles of this fine island are a thin stratum of decomposed lime-stone, here and there mixed with clay, gravel, and iron-stone. Several miles are a rich clay upon gravel, some thousand acres are old loam, or what is called garden ground; as, for instance, near Kilchiaran, and in several farms of the Rinns district, and the parish of Kildalton: the remainder is either peat-moss, or the decomposition of
ardesia,

ardesia, sand-stone, and schistus. This island exhibits not only the pleasing symptoms of a good soil, but the rare phenomenon in this quarter of the world, of judicious management, rational industry, and rapid improvement. The principal proprietor, as well as Mr Campbell of Ballinaby, sets a good example, which a very respectable tenantry are anxious to follow. Green crops are generally introduced,—lime-stone is burned for manure with peat fuel, even by the small tenants, who pay no more than eight or ten pounds of rent; and inclosures, roads, and draining, give the soil an air of sheltered richness and comfort rarely witnessed on this side of Scotland.

Jura.—Huge masses of granite, some patches of clayey gravel, and loam mixed with *cailloux rous*, not unfertile were it well managed, yielding good crops of oats and potatoes. No inclosures, drains, or improvements of any kind (excepting near the landlord's and minister's houses) have as yet commenced.

On the sound of Islay there are many hundred acres of improveable moss in a state of total neglect.

Mull.—Great varieties of soil. The south and south-west, decomposed granite and basalt, in some places mixed with clay upon gravel or rock, too thin, but sharp and fruitful. In the north and northwest the soil is too thin, the decomposition of whinstone, fit only for pasture, and that but poor and scanty. Inclosures, planting, and drains, scarcely known, excepting on the lands of two or three out of twelve proprietors, and two farmers of good education and enlightened

minds. On the farm of one of these we found considerable quantities of shell sand imported by sea from a distance of 12 leagues, for top dressing, grass parks, &c. and were happy to observe the improved husbandry of the south of Scotland introduced, as far as climate, soil, and situation would permit. He has also finished a regular stone dyke, of excellent dimensions and workmanship, of a mile in length; a rare degree of exertion for a farmer in this neglected island. The soil and climate of Mull suggest the cultivation of grasses, green crops, and woods, to the almost total exclusion (excepting in the district called Ross, and the islands of Ulva and Gometra,) of culmiferous or white crops.

Skye.—Every diversity of soil, in all their modifications, excepting pure sand. In Lord McDonald's parish of Kilmuir, in the fine district of Totternish, there are four thousand acres of as fine loam, and loam and clay, upon a gravelly bottom, as are to be found in Scotland. With good management, that land would in Skye be worth three guineas per acre, in East Lothian, five. Some fields have been under crops of barley and oats, without any rest for 20 years, and with scarcely any manure. The whole district is admirably calculated for turnip husbandry, and for the established rotations of crops on the best of soils. In Sleat and Strath, in some parts of Strathaird, and what is called Macleod's country, we find great tracts of light friable mould upon gravel, and also loam mixed with peat earth, the very best soil for sown grasses and green crops; and yet these are scarcely ever tried by the natives. Some gentlemen have lately begun, at Corry,
Scalpay,

Scalpay, Kingsburgh, and Lyndale, and with the best promise of success; but, in general, the island is very far back in the most obvious agricultural improvements.

Uists, Harris, and Lewis.—The Long Island, as this chain is usually called, is a ridge of granite, from the decomposition of which the most part of the vegetable mould and sand has been formed. This soil, excepting where it is mixed with clay and with marine productions, is not fertile; but, when assisted by the manures plentifully supplied by the island, yields abundant crops of the common grains of the district. The agriculture of it is, if possible, worse adapted to the soil than that of Mull or Skye. It is to be remarked, that the peat moss soil of this extensive range of islands is of better quality both for fuel and for agricultural purposes than that of any other part of Scotland, or its isles, with which we are acquainted. Has the sea spray impregnated these mosses with alkaline stimuli, or are they of more ancient formation than those of other districts?

Of the second rate islands, those of Lismore, Gigha, and Collonsay, merit particular attention with regard to their soils. Lismore is all limestone; and, where tolerably well managed, exhibits great luxuriance of vegetation and extreme fertility.

Gigha,—of which the soil is a mixture of reddish clay and gravel, with the decomposition of schistus, granite, whin-stone, quartz, and sand-stone, with here and there some lime-stone of no excellent quality, and with almost a verticle dip, is more indebted to the good ma-

nagement of its present proprietor than to any peculiar fertility of soil or advantage of surface. Roads, inclosures, drains, regular ploughing, and rotations of crops, prosecuted with much spirit on this island, render it a pleasing object to every patriotic traveller, and convince him that neither the soil nor climate of the Hebrides present any obstacles to their improvement, which may not be removed by a judicious and enlightened proprietor who has a personal knowledge of the people whose industry he directs, and who has vigour, patience, and we may add humanity, to persevere in his beneficent plans.

Colonsay, like *Gigha*, is rapidly improving, more in consequence of its proprietors exertions than of any natural advantages. The soil is the decomposition of schistus, ardesia, quartz, mica lamellata martialis nigra of Cronsted, and a coarse granite, in various places mixed with clay. Peat moss has been improved to a considerable extent, and found to answer exceedingly well, especially for grass crops. Too much cannot be said in honour of the proprietors perseverance and industry in the improvement of the soil, as well as the live stock of this interesting island.

Without entering upon a minute description of the soil and surface of the Hebrides, we may remark that the surface is by no means unfavourable * to agricultural

* The surface of the arable land is in most instances easily drained, having a proper level for carrying off the water, and abundance of lakes, rivers, or arms of the sea in the immediate

ral operations, generally speaking, but that by much the larger proportion of the arable land is of a description, which, taking the climate also into account, must considerably limit the productions and improvements of the ground. The greatest part of the surface now under tillage is light sand, totally unfit for wheat, beans, potatoes, oats, or other crops which require a strong soil for bringing them to maturity. The greatest defect of the soil in general is the want of a due proportion of clay to give it the proper degree of tenacity for supporting white crops. This is usually the case in all hanging grounds and hilly countries. The clay and fatter parts are washed away, while the gravel and sand remain behind.

The exceptions to this account of the Hebridian soil are not so numerous as to supersede the use and application of the general principles and practice of management, which both the soil and climate powerfully suggest. These we shall state in their proper places, without paying much deference to the causes commonly urged by the natives, of the present neglected

immediate vicinity. Few roots of trees or of strong weeds are met with; and even the stones, the most formidable impediments in the farmer's way, are more frequently blocks of middling size, of from 10 to 100 pounds weight, than rocks or strata that require blasting with gun-powder. Many of the isles need very little trouble to be bestowed on their tillage, their surfaces being level and sandy, and scarcely any are so difficult to be ploughed as either the Highland districts of Scotland, or those of Derbyshire, Westmoreland, Northumberland, and Wales.

ted appearance of their country,—or to the reasons which they are pleased to assign, for what we conceive to be nothing else but the perverseness of prejudice, and the obstinacy of rude and ancient habits.

The want of regular surveys of the different islands renders it impossible to state, with any degree of accuracy, the quantity of soil, of which clay, loam, sand, chalk, or peat, form the principal portion *. Peat and sand are however the predominant characteristics of a very

* Peat earth, or moss, which forms at least two-thirds of the Hebridian soil, over the total surface of those isles, is an object of great importance to their agriculture. Their fuel consists of it almost exclusively. It is of very different qualities on the different isles, and in different parts of the same island, and often of the same square mile, or even acre, being modified by a thousand circumstances affecting its principles and its growth. On some isles, as in North Uist and Lewis, this earth possesses great fertility as a soil, and excellent properties as fuel. It appears to lose its best qualities in proportion to its lateness of formation, as well as to the quantity of water which is incorporated with it. The driest and oldest mosses, we mean those which have received the least additional growth from the late fall of trees, shrubs, &c. are uniformly the best; and the most difficult of management are the porous, ligneous, half-decomposed, and spongy, wet mosses.

very large proportion; and the first mentioned of these covers two thirds of the Hebridian surface*.

It is probable that the quantities of acres which we here subjoin, may not be far from approaching to the present

* ISLANDS.	Acres arable or meadow.	English miles of sea coast at high water mark.
Bute - - -	8,000	- 60
Arran - - -	10,500	- 150
Gigha - - -	1,500	- 30
Islay - - -	22,000	- 200
Jura - - -	3,000	- 160
Kerrera - - -	1,000	- 25
Collonsay and Oronsay	3,500	- 70
Luig, Saoil, Shuna, Lunga, Scarba - - -	5,000	- 80
Mull, with Ulva, Gometra, Icolmkill, &c. - -	10,000	- 400
Lismore - - -	4,000	- 50
Tyre - - -	5,000	- 55
Coll - - -	4,500	- 60
Skye with its islets -	30,000	- 750
Eigg, Monk, and Cannay	2,500	- 60
Uists and Barra, with Va- lay, Heisker, Borrera, & islets - - -	40,000	- 800
Raasay and Ronay -	3,000	- 80
Rum - - -	1,000	- 50
Harris and Lewis -	26,000	- 850
Hirta - - -	500	- 20
	<hr/> 180,000	<hr/> 3,950

present state of the land throughout the whole of them taken together,—although the proportion will not suit any individual island, and far less a majority of them.

In the whole Hebrides, 1,592,000 Scotch acres.	
Mountains, morasses, and undrained lakes, scarcely yielding any specified rent to the proprietors - - -	600,000
Hill pasture, appropriated to particular farms, and sometimes inclosed, or at least limited by acknowledged marches, as lakes, rivu- lets, &c. and paying rent - -	700,000
Arable and meadow land, under grass, hay, corn, or potatoes - - -	180,000
Kelp shores, dry at ebb tide, regularly divided among the tenantry, and producing 5,000 tons of kelp, besides manure, annually -	30,000
Ground occupied by villages, farm-houses, gar- dens, gentlemens parks, &c. -	20,000
Ground occupied by peat-mosses annually, and by roads, ferry-houses, and boats -	22,000
Barren sands, tossed about by the winds, and pernicious to their vicinity - -	25,000
Ground occupied as glebes, or in lieu of glebes, by established clergymen, manses, churches, and church-yards - -	8,000
Ground occupied by schoolmasters -	2,000
Ground under natural woods, coppices, and new plantations, chiefly in Bute, Islay, Mull, and Sky - - -	5,000
Total -	<hr/> 1,592,000
	SECT.

SECT. V.—MINERALS.

THE name of *mineral*, in the strict sense of the word, denotes only such substances as are found in mines; but the term is generally applied in a more extended view, to characterize that class of inorganic and inanimate bodies which form the solid mass, or rather the external covering of the globe which we inhabit. The totality of these substances has received the appellation of the mineral kingdom, in opposition to the remaining grand divisions of nature, called the animal and vegetable kingdoms.

Minerals exhibit no phenomena dependant on external organization. They may increase in size, but their growth is very different from that of organic beings. It does not take place by virtue of nutrition, and subsequent expansion of organic matter; and it is not affected by external functions. The magnitude of a stone can only be increased by virtue of a mechanical or chemical application of new matter; it is the result of a combination of external materials, aided by mechanical action, or regulated by chemical affinity. The subjects of the mineral kingdom are absolutely passive; they are acted upon by external agencies only, and possess no power of changing that action.

Few districts of our Empire contain such a variety of minerals as the Hebrides. The metallic ores of iron, lead, copper, &c. abound in several of them; marble, limestone, and slate, occur in the size and form of mountains,

mountains, marl, fuller's and allum earth, freestone, and coal, are found in various parts of the large isles, as are indeed all the subjects of Scottish mineralogy. In a field so extensive, and so little explored, we must be contented with adverting only to a few minerals of prominent importance.

1. *Coal*.—Although coals have been discovered in all the large islands, excepting the western range of the Uists, Harris, and Lewis, yet no coal-works have hitherto been prosecuted with success. A trial was made in Mull, at two different periods, since 30 years ago, by Sir Alexander Murray of Stanhope, and by Sir James Riddell of Ardnamurchan and Sunart; but in consequence of some unfortunate accidents, the seams, which promised considerable returns, were abandoned in a short time, and have been neglected ever since.

Equally unfortunate with the experiments tried at Bein-an-sonaidh in Mull, have all the other trials proved, which took place a few years ago near Portree in Skye, by order of Lord Macdonald, and in other isles by different persons, from the Mull of Kintyre to the Butt of the Lewis, for half a century back. This is the more to be regretted, because the scarcity and high price of fuel, is the most serious obstacle to Hebridian improvements, and must always prevent the successful prosecution of mining, manufactures, fisheries, and commerce, besides being a powerful bar to agricultural practice. From the coast of Fife, round Scotland and its isles, to the Frith of Clyde, a distance of five hundred miles, there is no coal wrought nor used, excepting what is carried at a great expense by sea. The inhabitants

habitants of Tyree, import their peats from the island of Mull 28 miles distant. They must first make a voyage or two to cut them; secondly, two or three voyages to raise them for drying; thirdly, a voyage for stacking them on the shore; and, fourthly, voyages innumerable, according to wind and weather, for importing so cumbrous a cargo over a portion of the Atlantic as furious and ungovernable as any sea in the world. The natives waste a considerable part of the summer, annually, in efforts (often frustrated by the climate) to secure peats for fuel; and it frequently happens that they are compelled to neglect or postpone the period of sowing their land, in order to cast their peats and attend to them, while the crops thus neglected are put backward till late in autumn, and perhaps lost by the early setting in of the equinoctial storms.

The man who opens a coallery in the Hebrides, or opposite the mainland of the west of Scotland, north of Kintyre, will confer a greater favour on those sequestered regions than the whole dictionary of praise can express. He will literally kindle the flame of gratitude, and, like the genius of poetry, in northern regions, he will indeed "Cheer the shivering natives dull abode."

In some of the larger Hebrides, especially Lewis, Skye, and the Uists, there are peat mosses of excellent quality, and in inexhaustible quantities, nigh the sea shore, and contiguous to very good harbours, which might be turned to good account by the natives, were they as industrious as they ought to be. In Flanders, Holland, and the continental Danish provinces, the peasants literally manufacture peats for sale, and that out of very bad moss, and maintain numerous families

miliee in comfort upon their earnings. Were there forty or fifty such families established in Loch Maddy, in North Uist, or in any place in the course of shipping from Cape Wrath to the Mull of Kintyre, equally favoured by nature as that spot, they would annually, in the months of May, June, and July, provide a sufficiency of fuel for the Hebrides, and be able to sell it at two or three shillings per ton. It is amazing that no such plan has as yet been adopted, when we consider that these regions suffer more from want of that accommodation than from any other which can be specified. The facility of the manufacture, too, makes the neglect of it inexcusable. It is well known that two men can in six hours time throw out of a peat-moss a quantity sufficient for the consumption of two families for a year, although they may not perhaps have been accustomed to that sort of work. Two boys can raise these peats on end in a few hours time afterwards, and that is all the labour which peat-working requires from the Hebridian. The loss of time in going to the moss and returning home; the difficulty of carrying the peats upon the backs of horses, or of men and women, for several miles, in a country without roads, as often happens; these are a disgrace to the national industry, when, by proper management, they might so easily be avoided.

2. *Copper*.—This metal has not been found in considerable quantities in the Hebrides, excepting in the island of Islay, where it is probable that copper was discovered and wrought by the Scandinavians many centuries ago. But even in Islay it does not promise to turn out to good account.

3. *Lead*.—Lead ore occurs frequently in the Hebrides, and has been wrought for ages in Islay. We found favourable appearances in Coll, Tyree, and Skye, especially in the district of Strath, the property of Lord McDonald. It is only in Islay that lead has hitherto yielded employment and profit. In Shawfield's leases to his tenants of that island, he reserves to himself the right of granting liberty to whom he pleases to dig, quarry, and carry away from the lands any minerals or metals which they may contain, paying the tenant, however, for any surface damage done to his possession. He has one eighth part of the gross produce of such mines as his share, without having any thing to do with expences, risk, &c. We found forty-eight miners and an overseer in June 1808 in Islay; and were assured that the quantities of lead ore are inexhaustible, provided a competent capital, and a man of science and influence were engaged in their management. The landlord very properly directs the chief attention of his people to the cultivation and improvement of the soil of his fine island, and by no means enters keenly into speculations of mining, or of any other precarious art. The lead has yielded L.12,000 since 1761.

4. *Tin*.—This metal seems to be scarce in the western isles, or rather it has not been looked for with any considerable attention, although many parts of them bear a great analogy in point of appearance with the tin districts of Cornwall.

5. *Iron*, the most useful of metals, and that which bounteous nature has scattered most liberally over all

her works, is met with in almost every one of the Hebrides. Its appearances are indeed various; but in many of the isles, and especially in Lewis, Skye, Arran, and Mull, the ore appears to be particularly rich, and to merit more attention than has hitherto been bestowed. No iron works are carried on, nor is it likely that any shall prosper before a coalery is opened in the neighbourhood.

6. *Various Minerals.*—Fullers earth is found in Strath, in Skye, and allum earth in the neighbourhood of Lord Macdonald's house at Mogstadt in Trotternish. Vitriolic mundic, emery, and quicksilver, occur near the copper and lead mines of Islay; but none of them have been turned to account.

Limestone, the most useful mineral for the Hebrides, abounds in several of them in inexhaustible quantities. Regular lime kilns are erected in many parts of Islay, in three places in Lismore, whence vast quantities are exported, and lately by Lord Macdonald at Broadford in the isle of Skye.

Bute and Islay are, however, the only islands which have as yet availed themselves of the benefit of lime for agricultural purposes to any extent. The first mentioned of these has been in the practice of using lime for manure for half a century past, but Islay only within the last 25 or 30 years. We counted 88 lime kilns belonging to farmers on Mr Campbell of Shawfield's estate in Islay in one day's walk, and could plainly trace the advantages derived from them in the improved condition of the adjacent farm steadings and fields. It is burned with peats, and has made a prodigious change
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to the better in the appearance of the island, even within the last ten years.

The limestone of Lismore, being of excellent quality and perfectly convenient for shipping, as well as in the tract of vessels which pass through what are called the Inner Sounds, has a greater demand than that of Islay, Arran, or Skye; and, in consequence of the good management of Bishop Chisholm, affords a regular supply at a moderate price to the numerous Hebridian customers. The price is at present ninepence per barrel.

Marl is found in most of the larger islands; and is turned to great account in Islay and some parts of Skye. Mr McKinnon of Corry has improved a considerable extent of deep moss with marl in the vicinity of the church of Kilchrist in Strath, and the advantages of that valuable manure are pretty well understood by all intelligent farmers in the Hebrides.

Marble of tolerable quality has been quarried on the Duke of Argyle's properties in Tyree, at a place called Ballyphetris and in Icolmkill, as well as on Lord Macdonald's estate of Strath in Skye, where there are hills of that noble stone. It must, however, be acknowledged, that either owing to the natural inferiority of this fossil, in the Hebrides, to that which is imported from Italy, or to the manner of quarrying it, no great encouragement has hitherto been offered to the proprietors for laying out money for facilitating its exportation. We have heard complaints against the apathy of Hebridian proprietors on this and similar subjects, which, after due investigation and inquiry on the spot, we found to be very ill founded and unjust.

Slates form one of the principal articles of Hebridian export. Esdaile, Belnahuagh, and the adjacent islands, quarry upwards of 5,000,000 annually, and employ near 280 workmen in preparing them for market. These, at the average price of 30s. per thousand, fetch L.7,500 Sterling per annum, a vast sum for ground which would not let for L.20 in corn or grass! Many other islands besides those now mentioned contain slates of excellent quality. We found them in Arran, Islay, Jura, Mull, and Skye.

The more common Highland productions of granite, free-stone, porphyry, whin-stone, quartz, plumbpudding stone, &c. abound in vast quantities through the different isles. The island of Raasay is a mass of free-stone and of porphyry. The latter is found in regular beds almost ready cut for millstones within a few yards of the sea, and within a few hundred yards of the proprietor's house. In Arran, Mull, and Skye, are inexhaustible stores of free-stone, and of granite of the finest kinds, and also very grand and curious rocks of plumbpudding. Petrifications of fishes, of shell fish, and of marine plants are innumerable. To the mineralogist, the small island of Eigg will prove an interesting scene, and to the geologist Eigg, Canna, Rum, Tyree, Icolmkill, and Staffa, which he can survey in a week, will afford subjects of edifying and delightful contemplation.

“*Fossils*.—Of the fossils in the Highlands, there are some which might be exported as articles of trade, as they are capable of being rendered useful in manufacture or in the fine arts. The places where such are
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to be found may be here noticed, and the uses to which they may be applied.

Marbles.—"The marbles which have been generally most esteemed, both by the ancients and moderns, are those which are most remarkable for their variegated and vivid colours, and for their exquisite polish; but there are others which have been held in high estimation because of their rarity, some on account of the singular ingredients of which they are composed, and some because they answer best the purposes of the sculptor. There are marbles of all these different sorts to be found in the Highlands.

"At Armady, in Argyleshire, there is a very beautiful marble*, which was worked for some time by the late Earl of Breadalbane. There are a few tables of it preserved at Taymouth, at the house of Lochnell, and at Edinburgh. The spar of which it is composed consists of plates remarkably large, yet it is very hard, susceptible of a fine polish, and possessed of great variety of bright colours. It is disposed in the earth in a vertical stratum, only a few feet in thickness, between strata of hard whin rock. In this situation the working of it would be expensive, but the expence would not be thought too great by the opulent, who have a taste for fine marbles.

"In the island of Icolmkill there is a white saline marble sometimes veined with black, and sometimes containing veins of greenish mica. A large altar table

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which

* Marmor, *Abanac*.

which formerly existed in the ancient abbey, upon the island, was formed of this marble *. A quarry upon it was opened some years ago by Mr Caspe, a German miner, and some pieces of it brought to Edinburgh, which were much esteemed.

“ In the year 1764, there first occurred to me a very uncommon marble in the island of Tyree. The ground of the stone is of a carnation colour, and the concretions are of green chrystalised schorl †. A block of it was brought to Edinburgh, from which a table was formed for the Duke of Argyle, and placed in the palace of Holyroodhouse. In this block a mass of quartz of extreme hardness was included, and smaller quartz nodules of the same nature do sometimes occur in the stone. Several pieces of this marble have been since brought to Edinburgh, where it has been much admired. It is not only beautiful, but its composition and colours are quite singular, and not known to exist any where else.

“ An eminent person, well known as a mineralogist, and especially for his great knowledge in the antique and modern Italian marbles, was of opinion that it might be exported to Italy, and disposed of in large quantity, and with great advantage.

“ There was discovered at the same time, in the island of Tyree, another marble, likewise of a very singular nature ‡. It is of a pure white colour, and of a very

* Marmor, *D. Columbae*.

† Marmor, *Hebridianum*,

‡ Marmor, *Boreale*.

very compacted substance, having no visible grit or grain, which is the case in what are called the saline marbles.

"It is considerably hard, admits of a fine polish, and is interspersed with concretions of a grass green transparent schorl. It is situated in a hill near the centre of the island, where it constitutes an extensive body of rock which bassets or breaks out at the surface. Near Appin house, in Argyleshire, there is a marble which has been quarried for the purpose of burning it into lime. It is generally of a whitish grey uniform colour; but in some places it is filled with yellow bands or stripes of an equal breadth throughout, and exactly parallel to each other *. This stone when cut and polished has a very singular and fine appearance.

"In the country of Strath, in the Isle of Skye, and in the neighbourhood of the church of Hul-Christ, there is a variety of marbles which well deserve notice. One of these is a dove marble †, being white, but finely clouded with a variety of grey colours. It receives a finer polish, and is of a finer appearance than the common dove marble brought from Italy.

"At the same place there are strata of a white marble of a very remarkable sort ‡. It is a saline marble, but not of a plated structure. It has a visible grit or grain, composed of very minute particles, and possesses but a low degree of transparency. Though it admits

C 4

of

* Marmor, *Fasciatum*.

† Marmor, *palumbinum*.

‡ Marmor, *Caledonium*.

of a fine polish, its surface is not glossy and shining, but of a soft milky white colour, and is of that sort called the antique statuary.

“The white Italian marbles used for statutes, and especially that of Carara, are very transparent, and admit of the looking-glass polish. Instead of such a marble, with a refulgent surface, the Greek artists preferred one of the above description, or one of a dull white colour, which more resembled the whiteness of the human skin. The finest Greek statues are formed of a marble of this kind, but the quarries from whence it was obtained are now little if at all known.

“The strata of this marble in Strath, appear at *day*, and are very extensive. The minister’s manse at this place is formed of it; being the only house in the three kingdoms that is built of marble.

“The stone stands the weather, and is very durable; but, like all other white marbles, acquires a yellowish colour when long exposed to the air. It may be obtained of any dimensions, and is at no great distance from the sea shore, where it may be easily shipped.

“These marbles, which have now been enumerated, are well adapted for tables, vases, mortars, chimney-pieces, monuments, or other articles of internal architecture, and might be exported, with advantage, to the principal ports of Great Britain and Ireland.

“The last mentioned well deserves to be tried by our statuary.

Granites.—“When architecture and sculpture among the Romans came to a great degree of perfection, they employed, for the finest works in these arts,
stones

stones of a harder and more durable nature than marble. Such were the granites brought from Egypt, which constituted their most costly and superb monuments of art. Stones exactly of the same nature, and applicable to the same purposes, are to be found in several parts of this country, and especially in the Highlands.

“The parish of Ross, in the Isle of Mull, abounds with the syenite, or red granite, which the Romans brought from Siene in Upper Egypt. It is the hardest stone of the kind, has the most vivid colour, and is susceptible of the finest polish. To quarry, cut, and polish a table of this stone might be indeed expensive, but the expence would not be nearly so great as is sometimes bestowed upon a table of the same sort brought from the Roman ruins in Italy.

“The granites are disposed in the earth, and also found lying on its surface, in much larger masses than any other rocks whatever. In consequence of this property, the Romans were supplied with those immense columns and obelisks of a single stone, which continue objects of admiration in modern times.

“The high mountain of Cruachin, in Argyleshire, consists chiefly of syenite or red oriental granite, being the same stone with that of Pompey's pillar at Alexandria. The shaft of this famous column, consisting of one stone, is sixty-eight feet high. Masses of equal, or even superior magnitude, might probably be discovered in Cruachin. One block lying on the surface of the mountain, of a parallelopiped figure, and of considerable breadth and thickness, was found to be forty-two feet in length. The same is the case with the gray granite

granite or moor stone *. The large pillar, consisting of one stone of this material, preserved at Wilton, is said to have been erected by Julius Caesar, in the temple of Venus Genetrix at Rome.

“The mountain of Crufelt in Galloway is composed precisely of the very same stone, where masses of much larger size might be obtained.

“*Porphyry*.—The antique red porphyry†, or *Leucostictos* of Pliny, is by far the hardest of any kind of rock that is known. It was for this reason chosen by the Roman sculptors to form their finest busts and smaller statues, which, on account of the extreme hardness of the stone, were of the most costly workmanship, and accounted the most valuable. Porphyry is a compound rock, consisting of a siliceous ground, with concretions of felspar. Stones of this kind are frequently to be observed in the highlands.

“One species of it has been worked at Inverury‡, but though it consists of the same materials, it is not equal, in colour, hardness, and polish, to the Roman porphyry. Numerous varieties of this stone are to be seen on Ben-nevish and other mountains; but they are to be seen only on the surface, where they are probably much softer than at a greater depth. In the neighbourhood of this mountain, and in other places, loose nodules are to be found, which equal the antique porphyry

* *Psaronium Egyptiacum*.

† *Leucostictos antiquorum*.

‡ *Leucostictos obscurum*.

phyry in colour and hardness ; and of which vast rocks do probably exist, not far distant from the places in which they are found.

“ *Serpentine*.—The stone called serpentine, or ophites, much esteemed by the ancients, was so termed from its coloured spots and streaks, which very much resemble the skin of some serpents. The true antique serpentine is very little known ; that which commonly passes by the name is not a serpentine, but a porphyry, having a green transparent siliceous ground, with white concretions of felspar*. The real serpentine is of a very different composition, and consists chiefly of jaspideous and steatitical matter †.

“ A fine stone of this kind is to be seen in Icolumbkill ‡. Extensive rocks of it are stretched along the shore at the southern extremity of that island, where it might be quarried in abundance. It is of considerable hardness, of a pleasant green, clouded with other colours ; admits of a fine polish, and is capable of furnishing tables, or sculptured ornaments, superior to any sort of marble.

Another fine species of serpentine is found in the north, especially in the district of the Boyne. It was formerly worked ; and known, though erroneously, by the name of the Boyne marble §.

“ Before

* *Leucostictos viridis*.

† *Echidna veterum*.

• ‡ ——— *Columbae*,

§ *Echidna Scotica*,

Before the Union, it was frequently carried to France, where it passed by the name of the Verde d'Ecosse. It consists chiefly of a red martial jasper, and of green steatitical matter of the nature of the nephritic stone, and deserves to be better known than it is at present by our marble-cutters and statuaries.

Jasper.—Several sorts of jasper occur in the highlands; but the most remarkable and valuable is that which occurs in the isle of Rhume. It forms vast rocks towards the summit of the mountain, which is opposite to the isle of Canna; and masses of it abound on the beach at the foot of the mountain.

It is of a bright green colour, with a degree of transparency, receives a fine polish, and would form a valuable material in the hands of the sculptor*.

“Lapis Nephriticus.—The nephritic stone†, is a production found at Port-na-churich, in Icolumbkill, the creek where Columba first landed from Ireland. It is known among the natives by the name of the Port-na-churish stone, and is accounted a sort of amulet. Small rounded nodules of it are thrown out by the sea, but these have all been separated from the green serpentine above described, in which they are originally lodged.

Good pieces of it are of a greenish colour, half transparent, with whitish clouds, and, when held between the eye and the light, resemble very much congealed Florence

* *Tanos Scoticum.*

† *Nephriticus Columbae.*

rence oil. Its polished surface is not merely smooth, but unctuous, as it were, to the touch from the magnesian earth, which enters largely into its composition. This property did, in former times, and does still among the Turks, render the stone valuable for the hilts of a sword or sabre. It used to be highly prized for other ornaments; and might be still deservedly in request among lapidaries, was it sufficiently known. Small bits of it are sometimes found fit for rings, very transparent, and with opaline colours*, when it becomes one of the finest of the semipellucid gems.

“On the western shores of the isle of Mull, in the parish of Ross, and on the shores of the Isle of Rhume, lapidaries might likewise be supplied with great variety of onyx, and chalcedony of a good quality.

“*Soap-Rock*.—The soap rock is well known to be the best material for the manufacture of porcelain, and which gives to the porcelain of China and Japan so great a superiority over what has been generally manufactured in Europe.

“The English china is formed of various sorts of clay; but the finest ever made in England was at the Chelsea manufactory, which for some time was supplied with soap-rock brought from the Lizard in Cornwall. The scarcity of this material in Britain is much to be regretted, but there are appearances of it near Dunvegan, in the Isle of Skye, which deserve enquiry.

In

* *Nephriticus opalinus*.

“ In the neighbourhood of that place, a very fine steatitic, or soap-rock, breaks out at day *, and in such a manner as to give ground to think, that upon digging, it may be obtained in large quantity. It is of a pure white colour, and of a fine impalpable substance, unalixed with any other mineral matter.

“ Some of it has a greenish tinge, with a degree of transparency resembling the pure steatites called Spanish chalk, and is of a finer quality than that which was found in Cornwall.

“ *Tripoli*.—The tripoli used by our manufacturers and artists is brought from the African territory of that name. It is little known in Europe; and though many different opinions have been offered concerning its origin, it does not appear that any naturalist has ever had an opportunity of examining this singular earth in its native state: its origin, however, is evident, from its appearance on the maritime rocks at Ord in the Isle of Skye †. These rocks consist of a simple opaque silicious stone of a gray colour, and of great hardness. By the influence of the weather, these rocks are decomposed at the surface, and become covered with an earthy crust.

“ The stone of which they consist, though so hard as to strike fire with steel, passes into a soft friable earth, which stains the fingers.

“ The

* *Smectis frustulosa*.

† *Tripola Hebridiæ*.

"The stone itself is gray, but this earth formed by its decomposition, assumes a yellow colour. The earth itself in the aggregate is indeed soft and friable, but its integral parts or particles are extremely hard. When rubbed between the fingers, it appears, indeed, impalpable, and yet a peculiar degree of asperity or hardness is sensibly felt in its most minute particles,—the property which renders this earth of such signal use in the polishing of stones and metals.

"It covers these rocks in Skye with a crust from half an inch to several inches in thickness. In its sensible qualities and mechanical properties, it is exactly the same with the tripoli from Africa, and may be obtained in quantity in this place to answer all the purposes to which that earth is applied.

"*Chrystalline Sand*.—The high mountains called the Paps of Jura, and many others on the northern coasts of that island and of Isla, are composed of a peculiar species of silicious rock *. It is so white that the bare summits of these mountains appear at a distance as if covered with snow. Though this stone consists chiefly of quartz, it is not of a compacted substance, but composed of particles palpable to the eye. It is worn down and reduced to powder by the agitation of the waves, and thrown in upon the shores of these islands, in the form of a pure white silicious sand.

"As it is easy to be had in any quantity, and in great purity, it may be considered as a valuable material for
the

* *Cyanea Juræ.*

the white glass manufacture, any where upon the west coast of Britain, or on the eastern coast of Ireland. In the year 1766, soon after it was observed, there was trial made of it at Glasgow; but to that port, or to any other place upon the Clyde, it may now come to be more easily transported by means of the Crinan canal.

“ Millstones.—It may be presumed, that in every country the use of millstones accompanied the introduction of grain. They have been formed both in ancient and modern times, of various sorts of stone, according to the different sorts of rock in different countries.

“ The Romans in Italy naturally made use of marble, which has also been the practice in other countries; millstones of Italian marble have long been made use of in Britain for the finest wheat flour: there is a limestone prevalent in the northern parts of France, which has also been applied to this purpose; it is the stone of which the city of Paris is mostly built, and out of which the cave of the observatory is formed. Millstones of this kind were formerly transported both into England and Scotland; but if a calcareous stone is to be used, we have limestones in different parts of the country, particularly at Burntisland in Fifeshire, which are equal, if not superior, to any foreign marble or limestone whatever.

“ All these are simple rocks, not composed of different materials obvious to the eye; they are so soft as to refuse striking fire with steel, and are not sufficiently durable for a millstone. The stones most proper for this purpose, are some sorts of compound rock consisting of different ingredients; some of which are soft,
but

but others so hard as to prevent the stone from being soon or easily worn down by triture; of these, the different sorts of sand-stone, or free-stone, as they are called, have been commonly used in Scotland.

“Free-stone consists essentially of two ingredients; the one is an argillaceous matter, or paste, which serves as the base, or, as it is called, the ground of the stone; the other, called the charge of the stone, or the concretions, consists of particles of silicious sand, imbedded in the argillaceous paste. By the softness of the clay and the smallness of the sandy particles, these stones, however, are soon worn out; the best of them are such as have the least clay in their composition, and in which the silicious particles or concretions are of the largest size, and the most firmly united.

“But the stone usually termed molaris, or millstone, is of a different nature from these; it has a base or ground of sand-stone, consisting of clay and sandy particles; but in this there are imbedded larger concretions or masses of other stones, some of them very hard, and especially rounded nodules of quartz. These very hard concretions preserve the softer parts of the stone, and prevent their being worn away by the trituration.

“In many countries, none of the above stones are to be found; and the inhabitants are therefore obliged to have recourse to others for grinding their grain.

“Their choice, however, has been generally and very reasonably directed to rocks of the compound kind, consisting partly of soft and partly of very hard materials; such were the stones used by the Romans, who accommodated themselves with those stones found in the different countries which they invaded. A Roman

D
hand-mill

hand-mill for grinding corn, was shewn to me at Pass-castle in Cumberland; it was dug, with some other antiquities, at that place, which was a Roman station.

"The two stones of this mill were of a micaceous rock *, consisting of two ingredients; the one being mica or glimmer, which is very soft, and the other quartz, which is extremely hard. With this stone they had probably been supplied from the mountains in Wales, or from Westmoreland.

"It is remarkable that the Roman hand-mill was, in size and shape, exactly the same with the querns still used in the highlands of Scotland, and formed of the same kind of rock.

"We have no account of corn having been in use among the Caledonians previous to the Roman invasion of the country.

"This great similarity between the querns and the hand-mill used by the Romans, would insinuate that it was from them the Caledonians first received the knowledge of grain and its manufacture.

"Another sort of millstone brought from France, esteemed more valuable than any other, is known by the name of the French Burre; this is a sort of granite whose hardness renders the working of it very expensive, but that is overbalanced by its great durability. All granite is composed of three essential ingredients, quartz, mica, and felspar; these form what is called a conglomerated rock, or one in which the ingredients are compacted together without any visible intermediate

* Lepidotus, scale stone, micaceous rock.

diate cement. The mica or glimmer is soft, but the felspar and the quartz are silicious stones of great hardness.

"The granites best calculated for a millstone, are those in which the concretions of felspar are neither too copious, nor of too large a size. For this stone, the hard granite, is of a plated structure, and its plates are apt to separate upon violent concussion or trituration.

"The small-grained granites are the best for a millstone, or those in which the concretions of felspar, mica, and quartz, are of a moderate size.

"It is surprising that the granites in Scotland have never yet been applied to this important use.

"They abound in many parts of the Highlands and other places in the north, where they might be quarried for the service of the immediate neighbourhood; and they frequently occur likewise so near the seashore and harbours, as to be conveniently transported to any port of Britain.

"There is a fine red granite, fit for the purpose, on the shores of the Isle of Mull, opposite to Icolmkill, where the stones had been quarried of which the ancient abbey on that island is constructed. The high mountains of Cruachin, in Argyleshire, are chiefly composed of a granite of the same kind, upon which quarries may be opened near water carriage on Loch Etive.

"On the east coast there is not a more favourable opportunity for the purpose than what occurs at Aberdeen. Here the gray granite is of an excellent quality, may be easily obtained, and capable to afford a mill-stone superior to any burre that is brought from France. At

Aberdeen, the quarrying and dressing of granite is likewise better understood than at any other place in Scotland; the inhabitants having iron tools for the purpose, of a peculiar construction *.

“ Over all the south of Scotland, granite is a rare production, and chiefly confined to the stewartry of Galloway; but here there are two places very commodious for procuring millstones of burre or granite; the mountain of Crufell is entirely composed of a fine gray granite, nearly the same with that at Aberdeen; it may be there easily quarried of any size, and easily shipped at the foot of the mountain, from the quay at the Carse. The other place is upon the river Urre, a little above the house of Munches, where the river becomes navigable; here the granite is quarried for the buildings in the country.

“ It is so regularly stratified at both these places, as to be easily raised of the proper size, and easily shipped. From these places on the west, and from the neighbourhood of Aberdeen on the east coast, all the rest of Britain might be easily supplied with millstones of the burre kind, superior to any that are brought from France.† ”

SECTION

* These tools are said to have been introduced, above a hundred years ago, by a native of Aberdeen, upon his return home. He had lived many years abroad as a Polish Cramer, and had become acquainted with the use of these tools in some of the countries on the Baltic.

† Vide Walker's Hebrides, Vol. I.

SECTION VI.—WATER.**1. *Streams and Rivers.***

THERE is no part of the known world more completely watered from above and below than the Hebrides. Where the sea does not indent them in every conceivable direction, they abound in rivulets and fresh water lakes. But in a district so intersected by arms of the sea, as to have no place farther than seven miles from salt water, rivers of considerable size cannot be formed. Those of Skye, viz. Snizort and Sligachan, are the largest. Upwards of forty streams however carry salmon, and conduce to the ornament and benefit of the districts to which they belong. The island of Islay has two streams of considerable size, fit for all the purposes of moving and turning machinery, &c. Mull contains about ten; Skye, fifteen; and the Long Island eight. All these abound in salmon, trouts, and eels, and many of them have several other species of fish. It is singular that no bleachfields have as yet been erected upon any of them, not even in Islay, where great quantities of flax are manufactured into yarn and linens, and whence these are sent to the Frith of Clyde and Dumbarton for bleaching. The stream that runs out of Loch Finlagan, in that fine island, is peculiarly well calculated for bleaching, and has on its

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banks

banks a sufficient area of level ground for accommodating the most extensive operations.

As no manufactures worth mentioning have been established in the Hebrides, or are soon likely to be established, and as the practice of irrigation, or flooding grass-lands, is altogether unknown, the only use to which their streams are applied is fishing and grinding corn. Both these purposes are, however, very ill answered in general. The fish of even the larger rivers are permitted to be poached and destroyed at the spawning time, by every person who chuses to employ his time in that pernicious amusement; and as to the mills for grinding corn, (all other kinds are unknown, except in Bute and Islay,) they are placed in such situations, that many hundreds of acres of the best land in their vicinity are often sacrificed for the purposes of supplying them with water in summer (almost always in vain) and their dams and thatching employ a considerable portion of the most valuable time of the poor natives. The introduction of wind-mills would be an incalculable benefit, not only to the more level islands of Uist, Islay, and Lewis, but also to all the isles of second rate size, as Bute, Lismore, Tyree, Coll, Eigg, &c. Thirlage is abolished on the best managed islands, and very deservedly, and must soon disappear altogether. This blessing has in a great measure been brought about by the patriotic exertions of the Highland Society.

2. *Lakes*.—A glance at the map will convince us that no district in Europe contains so many fresh water lakes in the same number of square miles as the Hebrides. They are indeed so numerous in some of the isles,

isles, that they perplex the view, and defy enumeration. In North Uist, for instance, we counted one hundred and seventy, and then gave up counting the infinite number of small ones in despair. We are under the real number when we reckon the Hebridian lakes at one thousand five hundred, and may safely calculate their superficial extent at fifty thousand acres. Those of Lewis and Uist alone cover twenty-five thousand acres. These lakes are of very little use, and frequently interrupt communication, and cause other inconveniences, which may easily be conceived. They are rarely of any considerable depth, none approaching to that of the continental lakes of Scotland, or indeed exceeding three or four fathoms water, and very few of them so many feet. Some have lately been drained, as we shall afterwards mention, and the advantages are so obvious that the example is likely to be generally followed in the course of time. The benefit arising from such general system of draining them, it would appear extravagant to state to the full amount of our conviction; suffice it to mention, that more than two thirds of the best land in some islands is covered for five months of the year with not more than from *six inches* to *four feet* of surface water.

The fresh water lakes are not the most interesting of what are called lakes in English and lochs in Gallic, in this district: These are the numerous inlets and arms of the sea, which indent all the islands in every direction, and give them an extent of coast, if we follow the high water or sea mark around their shores, which almost exceeds belief. Those coasts, amounting to three thousand nine hundred and fifty miles in length, con-

tain a vast number of harbours of every description, some of them equal in point of security and capaciousness to any in the world. Instead of enumerating these, we refer to the general chart of the western coast and Hebrides, which contains a sufficient number of the most commodious and most frequented of them*. In all the Hebridian salt-water lochs, the fishes common to the west of Scotland abound. Four times the value of the land is calculated to be annually taken from the coasts in fish and kelp; and about one fourth of the population derive a considerable proportion of their maintenance from those two sources. The kelp shores of the Hebrides yield from 5000 to 5500 tons of kelp annually; of which quantity the Long Island furnishes 4000 † tons, along a coast of 1650 miles, following high water mark. The average price of Hebridian kelp these three last seasons (1806-7-8) is L.16 per ton; so that the 30,000 acres of shore, covered by sea at high water, have yielded L.80,000 of net produce to these islands; a sum exceeding *five times* the rent of the same extent

* Vide M'Kenzie's and William Heather's charts, 1804.

† Lord Macdonald's estate of North Uist has this by-gone season shipped for London nearly 1200 tons on his Lordship's account, and about 300 tons to some other ports on account of some of his tenants, who enjoy the sale of the kelp made on their farms. North Uist has thus exported kelp to the value of L.24,000 this last year (1808,) manufactured by 2500 individuals, betwixt the end of May and the 20th of August!

extent of their arable land. It is also to be remembered, that these 5000 tons of kelp employed nearly 8800 individuals, or 1700 families, in the manufacture of them, who could not otherwise be so profitably engaged. More than half the population of the Long Island, (which amounts to 24,460) *i. e.* 12,230, are connected directly or indirectly with this manufacture, and earn in three months what enables them to pay the annual-rents of the lands which they possess

The kelp manufacture is unquestionably of vast importance to these isles; but it cannot be denied that it is in some respects a bar to agriculture as well as to the fisheries. It occupies many hands that would otherwise prosecute those great national objects, and it consumes a large proportion of the manure which might be employed upon peat-mosses and waste lands. This subject, however, will naturally be resumed at greater length when we treat of the Long Island in detail.

The fisheries have not hitherto been prosecuted with the ardour and success which might have been expected from the adventurous spirit, and the natural advantages of the Hebridians; and, what is melancholy, they seem rather to decline than to advance in prosperity*. The villages, which have been established by public aid, have almost totally failed, owing to some radical errors in the method of their erection; and the numberless changes which have been made in the salt-laws, and in the

* Some exceptions may be mentioned, as for instance the fishing village of Portnahaven in Islay, which increases rapidly in industry and importance.

the Excise and Customhouse regulations, have uniformly tended to accelerate their ruin. These will afterwards come under consideration; meanwhile it may be remarked, that the human imagination cannot fancy a district better adapted by nature for prosecuting fisheries than the Hebrides, and the opposite coast of Scotland. They accordingly supply vast quantities of herrings and cod and ling annually, though in no proportion to what they might do if properly managed; and they have exported to the continent of Britain and Ireland, for many years successively, to the amount of L.300,000 Sterling, *per annum*. The village of Stornoway, in Lewis, shipped off for Clyde, in the five years ending 1808, the value of L. 52,000 * Sterling; a village which contains only 3200 souls, of whom scarcely one-tenth are fishermen.

3. *Ponds*.—There are no fish-ponds or ponds for ornament in the Hebrides. Water is so abundant, that recourse need seldom be had to art for furnishing a constant supply. The only ponds are mill-dams, and these are almost always a nuisance, and inadequate to answer the purpose for which they are constructed.

Some of the lower isles, which often suffer severely from the excessive droughts of June, July, and August, admit of irrigation ponds being made in various places, that would give earlier and better grass for spring food to their cattle than they can at present command; but many

* See Appendix.

many other more obvious improvements must precede that of irrigation in these districts.

4. *Springs*.—In so mountainous a region, intersected by the sea, and exposed to the first shocks of the Atlantic storms and vapours, it may be expected that springs should abound; and, indeed, no where do we find them in such lavish profusion as in most of the Hebrides. Arran, Islay, Mull, and especially Skye, have multitudes of chalybeate springs, which appear to be possessed of powerful properties. They have not been hitherto analyzed. A chalybeate spring, within a mile of Duntulm in Skye, has long been celebrated as a tonic, and has been used repeatedly with great success.

The incredible quantities of water discharged by many of the Hebridian springs, particularly in some of the small isles, and near the sea mark, (as for instance in the islands of Eigg and Cannay,) might throw considerable light upon the theory of fountains, were their connection with the adjacent grounds fully investigated. The subject does not belong to our immediate purpose; but it merits, and would reward, the attention of the geologist and natural historian. Spring water of excellent quality abounds in all the isles, and no ship need want a sufficient supply within a few yards of any of the thousand harbours which they contain.

CHAPTER II.

STATE OF PROPERTY.

SECTION I.—ESTATES AND THEIR MANAGEMENT.

THE Hebrides are possessed by forty-nine proprietors, of whom ten have large estates, each amounting to from 25,000 to 250,000 Scotch acres of land, and from L. 3,000 to L. 18,000 Sterling of rental. Of these proprietors, six are peers *. The number of proprietors varies almost annually in the large islands of Mull and Skye, and also in some of the smaller isles, where land is frequently offered for sale of late years, and

* The Dukes of Hamilton and of Argyle,—the Marquis of Bute,—the Earl of Breadalbane,—Lord Macdonald,—and Lord Seaforth.

and where also, it must be confessed, the interchange of property has added upon the whole to their prosperity. We see no reason, therefore, for joining in the lamentations of those who predict the downfall of the Hebrides with every farm that comes into the public market, or with every new proprietor introduced into them. With all our regard for the ancient landlords, and many of them are excellent characters in every respect, it does not appear that Hebridian improvements are much more indebted to them than to those of more recent establishment. Nor can we agree with the whining patriots who inveigh against large properties, and maintain the popular doctrine of the expediency of small subdivisions of land, both in fee simple and in tenure. The best managed estates are of considerable size, some of them indeed the very largest of all; and the best farming is found where extent and value are combined in one man's hands. The estates are nearly as follows in yearly rental :

			Proprietors, or Estates.
From L. 50	to	L. 500	- 19
From L. 500	to	L. 9000	- 22
From L. 9000	to	L. 18,000	- 8
			<hr/> 49

VALUED

VALUED RENT, (vid. Smith's Argyle, p. 325.)

	Valued Rent, Population in 1755.			Population in 1795.	Population in 1808.	Square Miles.
	£.	s.	d.			
Mull, with Icolmkill and Ulva	744	11	10	8016	9000	425
Tyre and Coll	280	10	3	3457	4300	52
Jura and Collonsay	286	18	5	1858	1880	125
Lismore, part of Appin	268	13	0	1121	1280	15
Islay	739	18	2	9500	10,500	370
Gigha and Cara	133	15	6	614	850	13
Mont, Rum, and Cannay, exclusive of Slate islands	87	10	7	950	850	63
Sterling, £.						
	2541	17	9	25,516	28,660	1063

Argyleshire Islands.

Inverness.

		L.	s.	d. Scots.
Inverness-shire	{ Skye	12311	6	0
	{ Harris	2533	6	8
	{ Uists	6066	13	4
	{ Eigg	733	16	7
	{ Barray	1395	0	0
	{ Raasay	689	16	1

Ross-shire	{ Lewis			
	{ & its isles	5250	0	0

L. 28979 18 8 Scots,
or L. 2414 19 10½ Sterling.

A fifth-part of the Hebrides is under strict entail; the proprietors of three-fifths do not reside on their estates, or spend any proportion of their revenues in the district; so that the state of property cannot be deemed altogether favourable to their improvement.

The great estates, as those of Lord Macdonald, Shawfield, Clanranald, Seaforth, Duke of Argyll, Hamilton, &c. are managed by resident stewards or factors, who usually live on the spot, and superintend the conduct of the tenants. The two proprietors first named have laid out much money in improving their princely estates, and evince, by frequent visits, and unremitting attention to their properties, that a large rental is not incompatible with the other duties of a landlord. Shawfield has always distinguished himself, since he succeeded to the Islay estate, as the first of Hebridian improvers. He resides in that island for three or four months of the year, and spends among a tenantry, who love and respect him, a very large proportion of the rents which they pay. He plants trees, and they grow where it was supposed none could thrive. He incloses,

incloses, drains, embanks, and has shut out the sea from several hundred acres of fine land ; employs nearly one hundred labourers all the year round, and teaches practically regular industry, good order, and perseverance. He not only delights in setting the example of rational agricultural improvements and experiments himself, but what is of infinitely greater consequence to his people, and to the islands around him, he encourages, in the most judicious and effectual manner, all those tenants who exhibit active industry, and a desire for improvement. By these means he has within the period of thirty-four years tripled the rents, and the intrinsic value of his fine island ; and what is peculiarly gratifying to mention, he has bettered the situation of his tenants beyond description *, and at the same time *doubled their numbers* †. Most of the other great proprietors are at present non-residents, and spend very little of their time upon their estates.

Some of the second rate landlords (we call them so merely from the scale of their properties, not from want of respect for their families and characters, which are often equal to those of any gentlemen in the kingdom,) deserve particular mention, with regard to the present

* Vid. Pennant's Tour, *et compara.*

† As I shall have occasion to make frequent mention of this gentleman, and always to his advantage, it is but justice to him and to myself, to state, (in order to prevent the imputation of partiality) that, at the time of writing this, I have not the honour of his acquaintance, and have never as yet even seen him.

J. M.

present management of property. Among these, three gentlemen of the family of Macneill, among which agricultural spirit seems to be hereditary, viz. the proprietors of Barray, Collonsay, and Gigha, have been for some time distinguished. They have all improved their estates, and at the same time the condition of their dependants. Gigha isle is regularly portioned out in measured farms, and cultivated with great skill; the intelligent landlord's farm leading the van. Collonsay is famed for good farming, excellent cattle, and admirable economical management; and Barray, as we shall afterwards see, is indebted to the present proprietor for some regulations highly ingenious and beneficial. Mr Maclean of Coll has begun, and carried on with success, several important improvements, particularly in the subdivision and specific appropriation of lands, which were formerly run-rig among his tenants, and also in the introduction of grasses and green crops. His humanity to the people of the island of Rum, to whom he sacrifices annually several hundred pounds of rent, is highly honourable to his character, and an instance among many others that might be adduced, of the merit of Hebridian proprietors with regard to the population of their country.

Mr Macleod of Raasay has lately carried on some considerable improvements. Some of the best sown grasses and green crops in the western isles were to be seen on his ground this season. His attention to his people, and his general benevolence and humanity are universally acknowledged in his district. He has carried on inclosing and planting to a very considerable ex-

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tent,

tent, and is at once exemplary as a farmer and landlord, and beneficent and respectable as a gentleman.

Mr Macdonald of Staffa has improved his valuable island of Ulva by roads, inclosures, judicious mode of kelp-making, and planting trees in sheltered situations. He is distinguished for his politeness and attention to the curious, who flock from all parts of civilized Europe to contemplate the singular and majestic beauties of Staffa. He uniformly pays great attention to the education of his tenants children, and to the state of the schools in the presbytery of Mull, where his property lies. It were much to be wished that other proprietors would follow his example in this respect, and rouse or promote the efforts of their clergy.

Mr Campbell of Ballinaby, in Islay, is fast improving both soft peat-moss and hard hill ground, for the purposes of aration. He rears excellent horses of the real west or Hebridian breed on his own property, rather larger than the common *Gearran*, but with the same properties of strength, activity, durability, and hardiness. A pair can draw the plough, with proper management, for twelve hours every day in the week. Three pair of these ploughed regularly, each working day, from the 6th till the 24th of May 1808, and with singular vigour and correctness, without any driver or leader but the ploughman. They had done the same for months before. We have never seen a more beautiful furrow in Norfolk, East Lothian or Holstein than behind the Gearrans, bred in Islay, and conducted, both plough and horses, by one Islay boy.

Many farmers of excellent conduct and enterprize might be named, as affording honourable evidence of a spirit

spirit of agricultural improvement. The greater part of Shawfield's farmers in Lelay, especially Messrs MacGibbon and Mackay, Dr Crawford, Mr Campbell of Ardmore, and several others of the name of Campbell, carry on improvements with much vigour and success. In Gigha some excellent green crops are raised by Captain Macdonald and other farmers. Major Maxwell in Mull, and several other farmers on the Duke of Argyll's property there, have begun to enclose, top dress, and otherwise improve their lands, in a style very superior to what was formerly practised on that island. In Coll, Tyree, and on Mr Macdonald of Staffa's property, the tenants advance pretty regularly and rapidly in a similar career. The isle of Skye, has, indeed, hitherto been almost wholly devoted to pasturage, and is still far behind the southern isles in agriculture; but improvements are now carried on to a considerable extent by Colonel Macdonald of Lyndale, Mr Macdonald of Scalpay, Mr M'Kinnon of Corry, Mr Campbell at Duntulm, and several other farmers on Lord Macdonald's fine estates on that island. In the part of it called Macleod's country, and in Strathaird, some gentlemen farmers are distinguished by their skill as graziers. Taliaker, Gesto, Rowandounan, and Mr Gillespie, and others, are a proof of this. The long island, still more backward than Skye in various respects, contains some spirited and highly respectable improvers; Major Macdonald of Askernish, Mr Macdonald of Balranald, Mr Maclean of Borreray, Captain Cameron of Lochmaddy, Mr Campbell of Ensay, Mr Chapman of Stornoway, and a considerable number more, evince by their improvements that much may be done by industry.

try in ameliorating the soil and the live stock of the barest of all the Hebrides; and some of those whom we have mentioned have carried on improvements without much encouragement from any quarter but their own spirit and sound sense.

We might mention many other proprietors and farmers who deserve credit for their improvements in Hebridian oeconomy, as well as many, alas! who, having the power, display not the smallest inclination to follow so good an example. But it is a general rule, and a good one, to force names into printed notice, only when there is some powerful motive for doing so. The general character of the Hebridian gentlemen too, is not always to be estimated by their agrestic usefulness. Some of them are excluded, by important and indispensable avocations abroad, from prosecuting improvements at home; others have been left in embarrassed circumstances, either by the misfortunes or the misconduct of their progenitors, and want the means of ameliorating their own or their people's condition; and it must also be acknowledged, that some, as in all other parts of the nation, want the active intelligence, the comprehensive views, and the beneficent, persevering, and manly sense of duty, which are requisite for the character of a good landlord in such sequestered regions of our country.

It is not our plan to name any of the latter. Let their own consciousness, let the contempt of their dependants, and we may add, let the *silence* of the traveller, who is usually abundantly eager to name his own benefactors and those of mankind, be their punishment. Meanwhile, we may safely assert, that in point of humanity

manity and kindness to their people, the Hebridian landlords are, with a very few exceptions, at least on a par with any proprietors in Great Britain; and that in spite of the clamour raised against them on account of the emigrations from their estates, they have been in the habit of sacrificing more of their incomes for the purpose of accommodating their poor dependants with lands, than any other land owners in the united kingdom. We shall afterwards perceive, from the present state of the population, how ill founded these clamours are, with regard to the Hebrides.

Next to the landlord, and his factor, steward, or chamberlain, in whom his powers are vested, are the baron bailies, justices of peace, sheriff-substitutes, and ground officers. These are the same in the Hebrides as elsewhere in the Highlands, and demand here no particular mention.

The valued rent of the whole Hebrides is L.59,482. 11s. 7½d. Scots money; and the real rental about L.106,720 Sterling. The average value of the forty-nine estates is L.2,177.19s. 2d. Sterling each, per annum. The highest, Lord Macdonald's (in extent about 220,000 acres,) may sometimes amount to upwards of L.20,000; but although susceptible of improvements to an indefinite degree, cannot be estimated at an average of years, in its present state, at above L.18,000 per annum. The smallest property is about L.50 of yearly rent.

The state of property is neither very favourable, nor the reverse, to agricultural improvements. There is a mixture of large and of small estates; nor is it easy to determine on which of these in general the greatest

spirit for improvement prevails. More depends upon the landlords disposition than on any circumstances connected with the state of the country or that of property; and accordingly, we find that every improvement of consequence which has been effected in the Hebrides for a century past, has owed its origin and success to some spirited and intelligent proprietor, who resided frequently on the spot, who understood business, or was of a cast of mind greatly superior to the common mass of our species. Some individuals of the houses of Argyle and of Bute, of Macdonald, Maclean, Macneill, and Macleod, have been of this description; and although they had not the same opportunities, or the same field for splendid improvements as other portions of our country afforded, yet they exerted themselves in such a manner that the Hebridians still pronounce their names with heartfelt gratitude and affection.

Having said so much concerning the Hebridian state of property, it is necessary to add that the present want of labourers, of mechanics, of industry, and consequently of many of the first comforts of civilized society, must be imputed to the scarcity of villages; and total want of towns; and that this inconvenience arises from the reluctance always manifested by the great proprietors with regard to granting feus, or a perpetuity, or even long leases of any part of their lands. Without such grants, villages can never thrive. It is independence, and independence alone, which can make amends for the inclemency of climates and the barrenness of soils. The very idea of possessing a spot of land which he can call his own, has an incredibly favourable effect

on the Hebridian's mind. Whoever doubts this fact, or joins in the common opinion respecting the indolence of his character, need only look at the ground about the villages of Tobermorey in Mull, and of Bowmore in Islay. No arguments will then be required to convince him, of what indeed every man who studies the character of the common Highlander sufficiently knows, that no people in the world have so great a value for land, or attach so high a notion to the importance of landed property, even in the smallest portions; as the natives of these remote islands. Of the Hebridian, as well as of the Swiss, we may very justly say:

Dear is that shade to which his soul conforms,
And dear the hill that lifts him to the storms :
And as a babe when scaring sounds molest,
Clings close and closer to the mother's breast ;
So the loud torrent, and the whirlwinds roar,
But bind him to his native mountains more.

SECTION II.—TENURES.

THE possessors of lands are of four different kinds ;

1. Proprietors who keep their lands under their own immediate management.
2. Tacksmen, holding their lands by lease of the proprietor.

lands being incompatible with the personal consideration and respect which they claimed, was ill placed and impertinent. They were in fact, by birth, manners, and education, gentlemen; and supported that character with admirable consistency in public and private life, in peace and war, in the palace, drawing-room, or in the field of battle.

The tacksmen possess lands at leases of different lengths, from nine to ninety-nine years, and sometimes a great deal more, and of from L.25 Sterling to L.800 of yearly rent. These farms are not held or valued by the acre, or any other specific measurement, but by the quantity of cattle which they can rear and maintain, or the quantity of kelp which can be manufactured upon them. It is very rarely that the produce of the lands in corn is taken into account, excepting merely in so far as the fertility of the soil for raising white crops can be calculated upon for yielding winter and spring food for the live stock maintained upon the farm. It is indeed very seldom that any farm can afford to sell off either corn or potatoes; and none can part with hay or straw.

But however respectable the character of the Hebridian tacksmen, and however proper it is to support that order of men in particular cases, and on certain estates, (as we shall mention hereafter) it cannot be denied that they have been instrumental, together with other causes, in keeping back the improvement of their country. The very circumstances indeed, which, in one point of view, constituted their respectability, were highly unfavourable to the cultivation of their lands. A tacksman, considering himself and his family as well entitled

entitled as any other members of society to the honours and advantages of civilized and polished life, had no idea of enduring the drudgery of a farmer's dull routine. The little that his farm could, by the miserable management of subtenants and servants, supply, was either consumed in his family, or laid out in preparing his sons for entering into the army, navy, or some of the learned professions. The profession of a farmer for any of his family never entered his head. The eldest son might perhaps have the farm, burdened with a provision for the daughters, &c. but it was not meant that he should remain at home to manage it himself, or that he should see one acre of it, until he had first tried to make his fortune in the world.

Agricultural improvements were, in this situation, completely out of the question; and such was the real condition of nine-tenths of the Hebridian tacksmen for a century past.

It is not easy to remove habits so deeply rooted in a remote district of the country, or to bring down the mind of the Hebridian tacksmen to the sober view of his condition, which the present state of his tenures enjoins. Hence the mutual ill-humour which we frequently witness between him and his landlord; and hence too the rapid decline, and probable annihilation, of that once gallant and valuable description of men.

That the existence of tacksmen, and that too in considerable affluence and high respectability, is not incompatible with rapid improvements and an augmentation of rents, at least upon large properties, appears evident from the present state of Islay. The humane and enlightened Mr Campbell of Shawfield, has about thirty gentlemen

gentlemen farmers tacksmen upon that island, who are, generally speaking, an honour to their order and to the management of the estate, as well as an advantage to the country. Most of the improvements which distinguish that *queen of the Hebrides*, have been carried on by these tacksmen, under the inspection, and with the approbation of the landlord. The tenants, who also have the benefit of leases, and therefore do not precisely answer the definition given of the majority of *Hebridian tenants*, have begun to follow the example of the tacksmen, in draining, enclosing, sowing grass seeds, and adopting a judicious rotation of crops, as well as in reclaiming wild and waste land.

The tacksmen of Islay combine, with the spirit and elegant hospitality indigenous in their country, the accuracy in dealing, the punctuality in paying, and all the useful qualifications of first-rate low-country farmers *. We shall afterwards see some of the causes which have produced the existing difference between Shawfield's tacksmen and those of other great Hebridian proprietors, and trust that the latter will in time imitate a conduct so worthy of the gratitude and respect of every friend of humanity.

It must not be forgotten, in mentioning the order of tacksmen, that they are exceedingly useful, and often necessary, for maintaining good order and government in the country. Without their aid, the efforts of the clergy and officers of justice would be painful and unavailing; and therefore they ought not to be rashly banished, were they to be viewed in no other light than

* There are no arrears ever due on the estate of Islay.

merely as subsidiary to the police and moral administration of the Isles.

3. *Tenants*.—These are becoming more numerous in proportion as the tacksmen are banished, or die out from the different estates. They pay from five pounds to twenty pounds of yearly rent, and possess lands on terms somewhat similar to the tacksmen's tenures; only with the important difference, that they seldom have leases, and are therefore absolutely dependant from year to year upon the proprietor's will. They seldom attempt improvements of any kind; and as the lands which they occupy are almost always uninclosed, and their grass and crops are mixed together, much confusion and mismanagement must naturally ensue.

In choosing betwixt this description of occupants and the one last mentioned, namely the tacksmen, a judicious landlord will consider the various circumstances connected with the lands which he means to entrust to them respectively, as well as the degree of attention which he himself can personally pay to his estate. He cannot expect any systematical or steady improvements, and far less any profitable *innovations* from persons of such limited information and experience as those tenants; nor can he reasonably expect that any man will improve lands of which he is not insured in the possession for a considerable time. Abstracting altogether from the considerations to which the national character has turned the thoughts of many who have written on this subject, we may adopt it as a principle in human nature, that no man will be contented, industrious, or active, by the mere influence of fear. He may be re-
strained

strained from many positive vices or crimes by it; but the most valuable energies of the body, and faculties of the mind, cannot receive their effectual impulse from so base a source.

In cases where works of great drudgery are imperiously demanded, such, for instance, as the manufacture of kelp, in hedging, ditching, and enclosing, &c. a proportion of tenants and subtenants may prove highly advisable on an estate. But even in these cases, they ought never to remain insecure in their possessions. The man who tills the ground, who builds a dike or a drain, and who cuts a portion of kelp-shore, ought always to know, whether he may look forward with certainty to doing the same, for his own benefit, another and a third time. He will work the better, and with tenfold spirit, in consequence of such assurance. He will have the nerve of industry along with the feeling of independence, and both will be invigorated by the power of gratitude.

The natural tendency of some of the most valuable Hebrides is towards occupancy by tenants. The greater parts of Harris, Uist, Tyree, and indeed all the kelp isles, must sooner or later come into their hands, as well as a large share of such islands as may commence extensive improvements, by reclaiming peat-mosses and waste lands.

4. *Subtenants*.—These are called, in the Lowlands, cottars, or croftars, and hold, either of tacksmen or of tenants, possessions at will, rarely amounting to above three pounds of yearly rent. This rent is often paid in different sorts of service, and is very seldom exacted in money.

money. The description of persons under review would fare infinitely better, and would prove much more useful members of society, by being in the strict sense of the word, *day-labourers*. The scarcity of day-labourers is one of the most serious grievances in the Western Islands, and cannot be remedied without considerable sacrifices by the proprietors, or at least better regulations than are adopted at present. How often are the crops overtaken ripe on the fields by the autumnal hurricanes and rains; the peats, especially on the kelp islands, necessarily neglected till the months of September or October, when the rains annually set in for weeks together, and, by destroying the fuel, annihilate the comforts of the season!

The persons now employed as sub-tenants, possess property in cattle, houses, or some other things, of from five to twelve pounds value, and almost always support numerous families in a state bordering upon perfect idleness. They often prefer having their children about them in the most miserable state imaginable, to the hardship, (or what they are pleased to call such) of driving them into service, either on their own island or any where else. It is a common sight, on entering the cottage of one of those subtenants, to find five or six grown up individuals, half naked and savage-looking, around a peat fire, watching a pot of potatoes, (their sole food for nine months of the year,) without any idea or wish of changing their manner of life; and on being demanded to work for hire, asking the most extravagant wages, or determined to remain as you found them. Had they an immediate prospect of independence, no people in the world would be more active;
but

but in their present degraded situation they appear to such disadvantage, that many strangers have declared it as their firm opinion, that the Hebrides, in order to be properly improved and duly civilised, must absolutely procure a new race of inhabitants. The number of subtenants in the Isles is very great, probably amounting to 40,000 souls, or nearly one half of their agricultural population.

Tenures, with respect to lands, are the same as over the rest of the highlands, and western parts of Scotland, namely, superiority, property, feu, and lease. These are so well and universally understood, that any illustration of them here would be superfluous; and the more so, as they have been detailed at some length by different gentlemen who have given their reports from Scotland to the Board of Agriculture *.

CHAP.

* We refer the curious on these topics, in particular, to the ingenious report of Peebles-shire by the Rev. Charles Findlater.

CHAPTER III.

BUILDINGS.

SECTION I.—HOUSES OF PROPRIETORS.

THE splendid ruins so frequent in the Hebrides are a sufficient proof of their power and resources in former ages. Castles were erected in the midst of large lakes, or in other inaccessible situations, at an expence and a labour which the districts in which they stood could not afford in latter times ; and they were finished in so masterly a style, that their remains, even in our days, excite astonishment and admiration. These castles, with the single exception of that of Macleod at Dunvegan in Skye, are now universally abandoned by the successors of those who erected them, and exchanged for less warlike and more comfortable accommodations. It must, however, be confessed, that while these isles have of late years advanced pretty rapidly in many
F other

other respects, and especially in their population and their connexion with the rest of the empire, they are very far behind in the article now under consideration. With a few exceptions, the houses of the proprietors are not distinguished by beauty or conveniency. In Arran, Bute, and Islay, we find indeed some noblemen and gentlemen's houses that would make a good figure in any county in Scotland; and in Mull and Skye, as well as in the smaller isles of Barray, Collonsay, Ulva, and Gigha, we observe a competent degree of solidity and elegance in building.

The materials universally employed in the walls are stone and lime; not a gentleman's house in all the Hebrides being built of bricks or of wood. The roofs are covered with blue slates, which require to be fastened in a manner proportioned to the violence of the winds, and the iron-corroding nature of the atmosphere. It is seldom that any roof lasts above twenty years, and few are water-tight above twelve. This is chiefly to be imputed to the two causes just mentioned. The violence of the westerly storms is tremendous, and the effects of the sea spray, and of a moist climate, with frequent recurrences of thunder and lightning, are well known to be very pernicious to iron. No nails of that metal should therefore be employed in the construction of Hebridian roofs, where any substitutes can be found; and great care should be taken to remove every utensil made of it from immediate exposure to the wind and weather. The same may be said of all substances which are apt to feel the influence of a powerfully corrosive atmosphere, such as soft timber not properly seasoned, undressed hides, woollen stuffs, &c.

Gentlemen

Gentlemens houses in the Hebrides are rarely built on plans corresponding with the nature of the climate, or in any degree consistent with their sagacity in other respects. Their houses frequently front the west, or even the south-west, by much the most uncomfortable points of the compass; they have windows in the roofs and garrets, instead of the gables, and in this climate these are scarcely ever found to be rain-proof; they are frequently three stories high, whereas they ought never to exceed two; and, were it not for the expence of roofing, would be still better with only one story. Necessity compels them to build porches before their main-doors, which, notwithstanding the constant trouble and awkwardness accompanying them, are never comfortable; but still they are better than doors altogether left unsheltered to the pelting of the pitiless west. How much better contrived are the houses of the upper Austrians, Stirians, and Carinthians *, who also inhabit a rainy and very tempestuous region. The last mentioned build an arch (about ten feet in span, and twelve or fourteen feet high at the key-stone,) in the centre of the front house-wall. Through this arch both persons and carriages enter into the court of the

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house.

* While the author travelled through these provinces and other parts of the Austrian Empire in 1805 and 1806, he paid particular attention to the injunctions of Sir John Sinclair, respecting their agriculture, their products, and their general political economy. He accordingly trusts that the Board and the public will excuse him for now and then alluding to them in this work.

house. The house itself has two doors, one on each side of the arch, upon the inside, for the entry of people of condition and of the commonalty into their different apartments. The principal door is always handsome, floored with marble or granite, and kept perfectly clean. As the court of the house is inclosed either with office-houses or a high wall, and usually forms a square or oblong rectangle, no wind can reach the principal door with any force; or should the site of the building, as must sometimes happen in a hilly country, be found subject to sudden squalls or eddy winds, double doors are provided for the chief entry, one in each of two arches, which, in that case, are thrown over the main passage into the court.

It is also surprising that in the Hebrides, a region so exposed to the inclemencies of the most boisterous climate in Europe, the obvious and simple accommodation of double windows is not adopted. These are common on the continent all over the north, and we find them even so far south as Austria and Hungary. They would add infinitely to the comfort and durability of Hebridian mansions.

SECTION II.—FARM HOUSES AND OFFICES.

If there exists a criterion by which a stranger can judge of the state of agriculture, of the situation of the

the peasants, and the disposition, management, and condition of the landed proprietors of a country, it is that which he finds in the appearance of their farm houses and offices. If these are neat, comfortable, and substantially built, every thing else will be found to correspond; if, on the contrary, they are in a state of dilapidation or neglect, the people prove to be uniformly dispirited, indolent, poor, and perhaps oppressed; while most branches of agrestic economy and improvement are at a stand.

Farm houses throughout the Hebrides admit of the same distinction which we have already drawn with respect to the tenures of lands, viz. houses of tacksmen, of tenants, and of subtenants.

Tacksmen's houses, though still far behind those of considerable farmers in the principal counties of England and the lowlands of Scotland, are however in general beginning to be tolerably decent and comfortable. On some isles they are in a certain degree elegant, especially on the estates of Argyle, Macdonald, Shawfield, Macleod, and Harris; and on all the large estates they have been very much improved within the last twenty-five years. Most of them are now built of stone and lime, and roofed with blue slates, two stories high, and furnished with kitchens and other accommodations. In many instances, indeed, the office-houses are still in a deplorable state, but even these are rapidly improving; and should this order of farmers exist for half a century longer, their houses will probably be as commodious, and their office-houses as judiciously planned, as those of the same description of men in any part of Great Britain.

The houses of the tenants are, generally speaking, wretched hovels, and those of the subtenants, nasty and miserable beyond description. The account given of them by Mr Pennant in his description of what the island of Islay *was*, is perhaps as just, when applied to the majority of these houses at present, as it is false and exaggerated when restricted to what Islay *now* is :

“ People worn down with poverty: habitations, scenes
“ of misery, made of loose stones, without chimnies or
“ doors, excepting the faggot opposed to the wind at
“ one or other of the apertures permitting the smoke
“ to escape in order to prevent the pains of suffocation.
“ Furniture corresponds: a pot-hook hangs from the
“ middle of the roof, with a pot hanging over a grate-
“ less fire, filled with fare that may rather be called a
“ permission to exist than a support of vigorous life:
“ the inmates, as may be expected, lean, withered,
“ dusky, and smoke-dried. But my picture is not of
“ this island only. Above a thousand pounds worth of
“ meal is annually imported. A famine often threa-
“ tens.”

It cannot be denied, that this picture is in some degree realized in a few of the Hebrides, even at the present day. Nor is it indeed easy for people, in the situation of the natives, to procure comfortable dwellings. Of all the materials requisite for building, they possess only two, namely, stone and clay; for lime is not to be obtained at a moderate rate on many of the isles; and where limestone exists, it costs a large sum in the burning. Wood is very scarce and expensive; slates are imported at a greater expence to those isles than to Edinburgh or London; and some islands are for

for ten months of the year inaccessible to shipping on those sides which the main body of their population inhabits; and they have no roads for horses or carts from their dwelling houses to the harbours in their mountainous districts. This is notoriously the case with the Long Island, with some parts of Mull, of Islay, and of Skye. It is no wonder, therefore, that farm houses and offices should be paltry in these regions. It were to be wished that the proprietors either built tenants houses altogether at their own expence, taking a per-centage upon the money laid out on such accommodations, and embodying it with the rents of their lands, or, at least, that they supplied the tenants and subtenants with wood and iron at reasonable prices. Each tenant's house would perhaps cost L.25 or L.30 altogether, and the wood and iron would amount to from L.8 to L.12. But in order to have comfortable dwellings of this description over all the Hebrides, it will be necessary for the landlords to commence a regular system of planting timber; for without having wood at hand, and growing on their own estates, they will always find the expence of purchasing it too great to be incurred in the first instance, for any after benefit to be derived from the accommodation afforded to their tenants, and the gradual amelioration of their estates.

It is in vain to insert restrictive and penal clauses in the conditions, whether written or understood, under which these poor tenants hold their lands, with regard to the building or repairing of their houses. They cannot help themselves. Land they must take on the terms prescribed by the landlord or his factor,

for they have no other means of existence. In order to obtain these lands, they must make a number of promises about inclosing, building houses, cultivating certain crops, &c. most of which they know, from the very beginning, that they never shall perform. Other promises they regard as exacted by wantonness of power, and accordingly evade in a thousand ways, without the least scruple, or the most distant idea of committing any wrong; and thus they remain in the most uncomfortable lodgings, with which their ancestors were satisfied many ages ago.

Instead of describing the tenants and subtenants houses, we shall rather point out what appear to be the least expensive, and therefore the most eligible kinds, and which are most likely to be soon adopted in this country.

A tenant's house should be 30 feet long within walls, 15 feet broad, and 10 feet high in the side walls. The roof must be somewhat above the square, or perhaps at the roof tree or summit an angle of 80 degrees instead of 90. On the principal floor, which ought to be seven feet high in the story, there should be a family room 12 feet by 15, a lobby with stair above a small cellar, occupying five feet in breadth, for facility in carrying heavy or bulky things to and from the garret story; and, in the other end of the principal story, a bed-room for the tenant, about 12 feet long and seven and a half broad, communicating with a kitchen of the same dimensions. On the garret story, which might be laid out on somewhat the same plan with the lower, will be room enough for keeping valuable articles that require protection from moisture,
and

and from depredation, such as wool, yarn, iron tools, sacking, ropes, seed, corn, &c. as well as for children and servants beds. A house of this description ought never to be thatched with straw in the common clumsy Hebridian fashion, nor indeed to be thatched at all with that material, which is here so valuable for other purposes, and which is so very ill calculated for withstanding the violence and wetness of the climate, but with slates or heather, or if these cannot be easily procured, with rushes or fern. There ought to be no windows in the thatch, or any part of the roof. Any light that may be deemed requisite must enter from the gables, or side walls, where, even in the garret story, windows two feet high, and three or four broad, may easily be admitted.

Such a house would suit a tenant paying from L. 15 to L. 50 *per annum* of rent; and seven *per cent.* which is too high a rate of interest for the landlord to exact, would only burden the tenant with from twenty to thirty shillings *per annum*, a sum which he can well afford for the difference of accommodation between this supposed *palace* and his present Hottentot *hovel*.

On Shawfield's lands in Islay, and several parts of the Duke of Argyle's in Mull, as well as in Gigha, Collonsay, and a few of the smaller southern Hebrides, we saw some of the tenants houses nearly approaching to what is now recommended. In Lewis, and some other parts of the range called Long Island, the tenants houses are mean and filthy beyond all description, as we shall see when those isles are more particularly mentioned.

SECTION III.—REPAIRS, (OF FARM HOUSES.)

EVERY outgoing tenant is bound, by the law of Scotland, to leave his houses and offices in what is called a *tenantable and habitable condition*. This expression, however, admits of great latitude of interpretation; and often means no more than *wind and water tight*. Even this they rarely are; nor, indeed, is it an easy matter for the poor Hebridian, with the miserable materials within his reach, to preserve any of his dwellings, for a considerable time, against the encroachments of the storms and rains of his climate.

The expences of repairs will best come in when we treat of the prices of materials and of workmanship, under the following head; suffice it therefore now to mention, that repairs are as defective on most of these isles as other economical improvements, and are entirely overlooked, excepting on the estates which have been so frequently alluded to as exemplary in all that relates to the welfare of the people and the improvement of the country.

SECTION

SECTION AV.—PRICES OF BUILDING MATERIALS, AND
ARTISANS LABOUR.

THESE, excepting the articles of stones and mortar, are dearer in the Hebrides at present than in any other part of the British Isles in Europe. They are the great obstacles to the comfort and the improvements of the common people, and even prevent men of considerable property from residing in the isles. It is perfectly unnecessary to enter upon any proofs of these facts; for they are so obvious to every man who knows the state of the districts in question, that he loses all patience on hearing them doubted.

Wood, lime, slates, iron, glass, and every article (except stone and clay,) connected with a habitable dwelling, must, in fifty instances out of fifty-one, be either carried from the low country, or ferried from a considerable distance through a tempestuous sea. Artisans of every description, excepting perhaps mere porters, or inside wall masons, must not only be paid higher wages than the common rates over the kingdom, but must also be procured with great difficulty, and at immense extra charges, from the Lowlands, or the continental Highlands, and must be supplied with various necessities and accommodations to which the Hebridians are rarely accustomed, and which they therefore find it extremely inconvenient and expensive to furnish. Of these obstacles to the building of houses in the Isles, strangers have no conception; and they accordingly of-

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ten impute to a savage taste, and savage improvidence, the privations under which they see the natives labouring, and to which they are astonished that they can submit. On making a calculation of the comparative expence of building and repairing all sorts of edifices or machines in the Hebrides and in the low countries, we shall find, that the expence amounts to fifty per cent. more in the former than in the latter, and that the tear and wear arising from the difference of the climates may be fairly estimated at 20 per cent. more. An erection, therefore, of any sort, which requires foreign materials, or foreign artisans, and costs L.100 in the Lowlands or in England, will cost L.150 in the Hebrides ; and instead of lasting twenty years, it will last only fifteen.

It must be remembered that the prices of labour stated in the statistical reports from 1790 to 1799, are altogether illusory, in so far as they relate to the Western Isles ; for no allowance is made in them for the very essential circumstances of the artists being bribed to come from distant districts, nor for the burden and expence of his accommodation. In estimating the price of labour, of materials for building, &c. we must attend to the various circumstances which influence them so powerfully in this country, and make due allowance for them in stating the collective expence.

The following are nearly the real rates at which building, materials, and the labour of artisans were found in the months of May, June, July, August, and September 1808, over the Hebrides at an average ; and it ought to be added, that these months are not only the most favourable, but also the only operative months
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of the year. Building per rood L.1. 12s. Masons wages 6s. 6d. per day, including every kind of expence connected with that description of artisans. Housecarpenters expences are equally high. Foreign fir was 3s. 4d. per foot. Slates L.1. 15s. per thousand, and lime 1s. 8d per barrel, before they could be used upon the houses.

From this statement, it must be obvious that poor people cannot afford to build proper dwelling houses or offices for themselves, and that the proprietors must grant their tenants effectual aid, otherwise they must be miserably accommodated, and the estates will remain unimproved *.

SECTION

* It cannot be denied that, in consequence of long habits of slovenliness and inattention, caused by the badness of their usual accommodations, it will not be easy to induce Hebridian farmers to keep their houses and offices in good order, should their proprietors even adopt the politic and enlightened plan of building these offices for them at their own expence. But means might be gradually fallen upon for preventing such abuses; and salutary stipulations to that effect might be engrossed in every lease or tack. We find, in fact, that on many newly improved low country estates, this system has been followed out, and greatly to the benefit of both landlord and tenant. The same has been introduced by the present proprietor of Islay, with his wonted liberality and judgement.

SECTION V.—COTTAGES.

Plans and Expence.—THE cottages in the Hebrides are almost universally so miserable, both in plan and execution, that they deserve mention only as proofs that a sensible and sagacious race of men may, by a combination of unfavourable circumstances, not only be gradually brought to endure deprivations, which to their equals in other countries would seem intolerable, but also, in the course of time, they may lose the power, and even the will of surmounting them. Three-fourths of the forty thousand cottagers of these Isles live in hovels which would disgrace any Indian tribe; and many of them are found on islands of the first rank in point of population and extent. At least seven thousand of the natives of Lewis (for instance) know nothing of a chimney, gable, glass window, house flooring, or even hearth stone, by their own experience at home; and what we call their furniture, is, as may be imagined, wretched and scanty beyond description, corresponding with their shabby exterior.

On this, as well as on several other points connected with an agricultural report, any account of the present state of the Hebrides would be a mere waste of time. It is, therefore, better to point out what is worthy of imitation, and what ought to be done, than to hold up the actual condition of these people to public pity or contempt.

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In the Island of Islay, great improvements have lately been made in plans and the materials of cottages. They are now composed of stone and clay, harled with lime, and roofed with heath, fern, or straw. The last is allowed only where the first mentioned cannot be procured. The roof is sometimes covered with tyles; and if with common thatch, it is well put on, and fixed with heather ropes and pins, not with ropes of straw, and stones pendent from the tops of the walls. The inside has in general a family room, divided by a deal partition from the kitchen, and cellar or store room. The garret is allotted to lumber of different kinds. A cottage of this description costs about L.20; the cottar himself furnishing the stones, mortar, and carriage.

In Gigha, some comfortable cottages, on a good plan, have lately been built. They are two and two, with one gable-wall containing two chimnies, (one at each side) sufficing for both houses. By this means the cottages are built at less expence; and they stand firmer when united than they would singly against the violence of the storms. Attention is paid to having large and sufficient windows in the side walls, not in the roofs, and also to having the doors towards the quarters of the compass whence the winds blow least furiously in the tempestuous seasons of the year.

Collonsay has also some good cottages; but, from the great distance from wood, their expence must be considerable. Coll and Ulva, and some few of the smaller isles, as well as some parts of the Clanranald estate in Uist, are of late much improved in this respect; and Lord Macdonald's estate, in Skye, promises to follow the example of Gigha and Islay.

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No cottager should be permitted to build a house without the concurrence and superintendence of some person appointed by the proprietor, and none ought ever to thatch his house with straw in the common way. Such thatch is never water tight, and lasts no longer than eight or nine months; indeed, it is frequently carried off by the first equinoctial gale that chances to assail it, and rarely stands a complete winter.

In a country destitute of day labourers, and where cottagers might prove extensively useful, it is of the utmost consequence to have good accommodation and encouragement for that description of men. Accordingly, we find them on a good footing in Islay, Gigha, and Collonsay, and in a few more islands, where they are sure of constant employment and regular wages. No farm of considerable extent can well dispense with these persons, whose families become very necessary at certain seasons of the year, and whose work is of essential use at those most critical periods of the farmer's annual toils which decide his reputation and fortune.

SECT. VII.—BRIDGES.

THE want of bridges is much felt through the larger Hebrides, and cannot easily be remedied in the present
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state of their agriculture and population. The Isles of Skye, Mull, and Lewis, would require two hundred bridges (each to cost L.50 at an average) for supporting the regular communication which the roads through their different districts demand. Two hundred more will scarcely suffice for Islay, Jura, the Uists, and the smaller isles; and these at an average of L.25 each, added to the expence of the bridges of the larger islands, making a sum total of fifteen thousand pounds, cannot be expected to receive a speedy completion.

In the island of Islay, we found twenty-two bridges, some of them of considerable size, well built, and in good repair. One between Bowmore village and Laggan Bay is a rarity in the west of Scotland, being built of cast-iron, and very light and elegant. It cost about L.140 sterling, of which sum Shawfield paid a considerable part. It has stood several years, though built over a considerable stream, and upon a soft foundation. The new roads in Skye and Mull gradually receive handsome stone bridges. Near the inn of Broadford in Strath, on Lord Macdonald's estate in Skye, there was built last season a very elegant bridge of three arches, and that island will soon have many more of equal or superior size to boast of. In point of roads and bridges, indeed, some of the Hebrides, especially those which belong to the noblemen and gentlemen whom we have already named as promoters of this country's welfare; are not much behind other remote districts of our empire. The traveller is however sometimes mortified and disappointed in this respect. Who would expect, for instance, that, on landing from Oban at Achnacraig in

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Mull, on a journey to the best peopled, most fertile, and valuable part of that great island, viz. the district of Ross, he should learn, that there is no ridable road, and that should he attempt walking on foot the thirty miles to the ferry of Icolankill, his progress must depend upon the state of the torrents in his way? He may be either drowned, or detained for days, on a road which does not possess a single bridge that can be depended upon. The inconveniencies resulting from this precariousness of communication, on a road by which the newspapers and letters must be carried, are many and great; and similar obstacles exist in Lewis, Harris, and several other Hebridian districts.

All the bridges worth mentioning in the Isles are built of stone and lime. Wood and iron last but a very short time in this climate, for the reasons which we have frequently mentioned; so that these materials cannot be used to advantage in any public works. The stone almost universally employed, is either granite or the harder species of limestone or of schistus, which abounds in the Argyleshire Hebrides, and is more tractable than granite.

Floodgate bridges occur now and then in the Western Isles, principally in places recovered from water, or to which high spring-tides have occasional access. These bridges are generally composed of earth or clay, faced with stone, of considerable breadth, so as to be nearly impenetrable to water, of various heights and lengths according to circumstances, but all furnished with flood-gates, which open for the out-going and shut against the incoming water. There is nothing peculiar
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in their construction. The most complete are those built in Islay at Gruinart by Shawfield, and on some parts of Lord Macdonald's and of Clanranald's estates in Uist.

CHAPTER IV.

OCCUPATION.

IN former times, the great objects of Hebridian proprietors, were power and security ; and accordingly they granted their lands in the manner best calculated for those ends. Hamlets were huddled closely together, in places most convenient for the chieftain to have his people ready for attack or defence : The property, whether corn or cattle, was mixed together, without any inclosures or subdivisions ; which gave to all parties concerned the same strong motives for their safety. The state of property was so precarious, that no landlord ever ventured upon agricultural improvements, but contented himself with bare subsistence for his dependents, in the same manner as his ancestors had done, and his neighbouring rivals. The land was occupied in common by the lower classes, who paid rents almost wholly in kind, and in proportion to the souming of cattle, or the quantity of grain which it was proper to sow in it,

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or which it was estimated to produce. This system prevailed until the Revolution; and its remains may be traced at the present day.

SECTION I.—SIZE OF FARMS.

EXCEPTING the island of Gigha, and a small portion of Islay, Mull, and Collonsay, no farms in the Hebrides are let in measured acres. Many of them, indeed, amount in extent to a number of square miles, and several thousand square acres, that pay but a trifling rent to the proprietors; while others are rented, perhaps, as high as any land in the highlands.

In estimating the size of Hebridian farms, the common plan is to attend to three leading objects: first, the number of live-stock which the farms in question can maintain; secondly, the number of bolls of grain which can be sown, or of ploughs requisite for their tillage; and, thirdly, the quantity of kelp that can be made upon them. Of late years some of the more extensive isles, as Skye, Lewis, Mull, and Jura, have been partially put under sheep stocks; and from the nature of their change, and the enormous fluctuation of the markets, cannot as yet be quoted in a report of this kind with any tolerable degree of accuracy. Most of them are not half-stocked, others have been overstocked, and a few are doing tolerably well, where the range is great and the climate mild. Were we to hazard an average rental of Hebridian farms, it may be fixed at nearly five shillings for each sheep, and one pound five shillings

for each full grown cow that they can maintain. The ploughgate of arable land varies from twelve to sixty pounds per annum, according to the circumstances of the different Isles.

The size of farms in Islay, which in this, as well as in many other points, must be considered as the leading one of the larger islands, is equal, upon the whole, to that of well managed estates in other parts of Scotland; and it is likely that the example will be followed, excepting upon the kelp estates. The size of tacksmen's farms upon that fine island varies from a rental of two hundred to fifty pounds per annum, and of tenants' possessions from twenty to seven pounds Sterling. The system of letting to subtenants, paying between L.2 and L.5, has been very properly dropt in Islay, and will gradually disappear, it is to be hoped, in the other Hebrides.

It is much to be wished, that Hebridian landlords had some way of providing for the surplus population of their estates, to whom they are in the present times obliged to give lands, as the only means of supporting them. Agriculture can never thrive, while those landlords must, from motives of humanity, parcel out their lands in very trifling portions to their tenants' families, who have neither skill, capital, nor any other possible means of improving them. It is easy for a stranger to declaim against the barbarous and inhuman custom of turning many hundred individuals out of their possessions, in order to make room for one scientific farmer's family, or perhaps for a shepherd and his dog; and it is equally easy to descant pathetically upon the genteel tacksmen's houses, which after ages of elegance and hospitality

pitality are now in ruins, and their owners converted into common tenants, or cottars and day-labourers. But the man who reflects for a moment upon the actual situation of this region, will perceive the absurdity of such declamations. The proprietors in question never drive away their people but in cases of extreme necessity. These cases are frequently so urgent, that it would be the height of cruelty to continue the people in their possessions in the way they themselves would wish. Ever since the introduction of potatoes, the smallpox inoculation, and since the cessation of the districtal wars and feuds between the different clans, the population of these isles has increased in a degree and proportion superior to that of any other part of our country. Some of the isles, North Uist, Tyree, and Eigg, for instance, have more than doubled their population within the last sixty years. The second of these isles just mentioned, consisting of twelve thousand acres, of which two thousand are water, rock, or marsh, maintains a population of three thousand two hundred souls; consequently three acres support one Tyrian inhabitant. But that small island pays to the Duke of Argyle a yearly rent of about three thousand pounds Sterling, the price of kelp included; so that three acres pay one pound of rent, and feed one native. The maintenance of each individual in the Hebrides cannot be calculated at less than five pounds annually, or, which is now the same thing, two bolls of meal at thirty shillings per boll, four bolls of potatoes at six shillings, and the value of sixteen shillings in clothing, shoes, and other necessaries, exclusively of education.

Now, if the island of Tyree raises annually a quantity of produce sufficient for the maintenance of three thousand two hundred inhabitants, and the payment of three thousand pounds of rent to the proprietor, making a total of nineteen thousand pounds per annum, each acre which is turned to account must produce the value of about two pounds Sterling. Supposing his Grace the Duke of Argyle were to dispossess and turn off two thousand inhabitants, and leave the possession of the land to the remaining twelve hundred, who are unquestionably competent to carry on the cultivation and agriculture of the island better than these are managed at present, excepting the kelp manufacture (which might be a separate business altogether) it is evident that the isle could afford a far higher rent, and that the dispossessed population, now consuming L.10,000 worth yearly, would fare better in any other way than in their present crowded state.

The Duke of Argyle, however, like many other Hebridian proprietors, cannot adopt at once a system which must be extremely harsh and cruel in the first instance; nor can he, however desirous of promoting his own advantage, as well as the best interests of his tenants and of the country in general, extend the size of the farms by dispossessing the two thousand poor creatures, who are now a dead weight upon them.

Mrs. McLean of Coll might let as a sheep-walk his large island of Rum, containing upwards of twenty thousand Scotch acres at a profit of several hundred pounds per annum, to two or three farmers, instead of the present three hundred and fifty inhabitants who possess it for a mere trifle, could he find any means of providing

providing for these poor people consistent with his patriotism and humanity. But although he has been for some years looking out for eligible situations for these persons, who are more and more crowded every year, and consequently must gain by being removed from an island on which they cannot possibly raise a comfortable subsistence, yet he has not hitherto been successful. Few men have had more trouble in this respect, and none has less deserved it.

It is as unfair, therefore, as it is nugatory, to charge the Hebridian proprietors indiscriminately with inhumanity to their people, or with want of judgment in the management of their estates, because glaring abuses of the description now stated are frequently met with. The nobleman last quoted, Lord Macdonald, Shawfield, and indeed all the great proprietors, and many of the secondary order, sacrifice a large proportion of their incomes to the necessities of their people, by preserving small instead of extensive subdivisions of farms of which their estates are susceptible. This must continue to be the case, until a general antelioration of system shall gradually take place; and of that amelioration Shawfield and a few others are yearly setting the example*.

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* Some very good remarks on this subject occur in a pamphlet written a few years ago by the Earl of Selkirk, "*On the Causes and Consequences of Emigrations from the Highlands of Scotland.*" It is, however, to be regretted, that this acute and patriotic nobleman did not take a more minute survey of these districts before publishing his work; for he would have found, in that case, some reasons for changing
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From what has now been stated, it is plain that we cannot enter into the patriotic alarm so pathetically raised by different well-meaning men, upon the present state of the Hebrides and the highlands, with respect to the size of farms; nor can we at all join in the reasonings of the late reverend and respectable Dr Smith in his report of Argyleshire, respecting the danger which the country runs of being depopulated by the introduction of large farms. The fact is, that there is not the smallest symptom of depopulation, or of a tendency to it, visible in the Hebrides, which, on the contrary, increase their population annually in a most striking proportion. By enlarging the farms in one part, and contracting them in other parts, of this extensive region, according to circumstances, of which only those people who are on the spot can be competent judges, it is possible to find abundance of room and of occupation for five times the present population of those isles; and there is little doubt of this event one day taking place.

It were much to be wished that manufactures could be established in some of the large islands; but so many obstacles present themselves, that our hopes, we must confess, are not very sanguine on that head.

his opinion as to the *necessity* of emigrations from the country, taken *collectively*; though there can be no doubt of the justness of his opinion with respect to particular portions of it. There ought to be an emigration from Icolmkill and Tyree; but it should be to Mull or Skye, not to America; also from Rum and Cannay; but they ought to be to Lewis, &c.

head *. The fisheries are too precarious for the constant employment of men who have no capital, nor means of supporting their families while they themselves are at sea ; so that an improved system of occupying the industry of the great mass of the Hebridian population in agriculture in its different branches, is the only grand means of relief under the present circumstances of that country.

Grazing farms, whether for sheep or cattle, must gradually be enlarged ; and kelp, or merely agricultural farms, must as naturally become limited and confined in point of extent. The great difficulty is to find room for the small tenants on the fertile districts, in the *mean time*, until they can maintain their families by improving waste lands, or by some other mode of industrious employment ; while their former possessions, instead of groaning under twenty or thirty families, might be turned to better account by one substantial farmer and four cottars or day-labourers. But this difficulty, though great, is not insurmountable, as we shall see when we describe the different islands in detail.

SECTION II.—FARMERS.

AFTER what we have already mentioned on the tenures and the different descriptions of possessors of land,

* The opinion here hinted will be further illustrated afterwards in its proper place.

land, it is not necessary to be very particular on this section. The character of the richer and better educated farmers, commonly styled gentlemen farmers, is highly respectable, and indeed inferior to that of no order of their fellow citizens. They have all the hospitality of men in an early stage of society, joined to the elegance communicated by intercourse with polished and enlightened nations: To the good humour and frankness of their Irish neighbours, they add the sagacity, acuteness, and correct manners of the Scottish character. Far superior to people in the same situation in other parts of our empire, both in point of manners and of real intelligence, they always make a good figure in every station in which they are placed. It is only at home, and under the numerous disadvantages to which they are liable as farmers, that they appear in an unfavourable point of view, the reasons of which we have already detailed, and fortunately they gradually vanish.

It is far from our intention to state any thing in a public report, which can give a candid mind any reasonable grounds of offence; and, therefore, in what struck us this season as particularly characteristic of the lower tenants, the subtenants, and cottars, through the Hebrides, we shall be brief and frank. It is almost superfluous to premise that our description admits of many exceptions, both with regard to the individuals of whom we treat, and of the landlords on whose estates they dwell: But the following general facts are accurate. They seem indeed to clash with our former observations upon the character of the common Hebridian, and his attachment to his native country, as well as his marked and deep rooted love of *landed possessions*; but this is
apparent

apparent only, not real. The very circumstances alluded to embitter his mind, where leases are not granted, and where a capricious and desultory species of management is adopted by his landlord. He cannot always distinguish between the liberty which every Briton enjoys, of disposing at pleasure of his own property, and the occasional abuse or perversion of that liberty.

The bond of connection, and the ties of clanship, which lately subsisted between those tenants and their landlords, and the gentlemen tacksmen, are dissolved. In many cases, indeed, they are replaced by a spirit of jealousy and hatred. Discontent and a desire of change, are almost universal. The ancient attachment to church and state is grown very feeble; so that these people would become methodists and Americans without any hesitation, could they better their fortunes by the exchange. Without fixed or definite ideas concerning any failure in duty in their clergy, they gradually relax in their respect for them, and have no small hankering after the pestilent fellows, who, under the names of different sectaries, lately ingendered by our follies and wantonness, swarm over these neglected regions. Without any original tendency to bigotry, or indeed any serious attachment or predilection for any specific articles of faith, they frequently indulge in a disputatious vein of religious controversy. This, with political speculations, some of which would astonish a man not accustomed to the amazing powers of the common Hebridian in conversation, interlarded with reflections upon the character and conduct of their superiors, and upon the hardships of their own condition, fill up their leisure hours.

hours. They have an idea, (perhaps not altogether chimerical) that they deserve a better fate than that which is fallen to their lot, and that, as the best soldiers and the best sailors in the world, they ought to enjoy many advantages now denied them. Nothing can convince them that poor people in other countries want the benefit of leases, and are turned out of their lands, or pressed into the navy and decoyed into the army; or, in short, suffer all the same distresses, resulting from indolence, poverty, or misfortune, precisely like themselves. They always suspect that they are peculiarly ill-treated, and live under an ungrateful government and oppressive landlords. In support of these charges, they mention the sack laws, the custom-house and excise regulations; and, above all, the pressing of sailors, the dearness of land, and the shortness, or *absolute want*, of leases.

It is unpleasant to find these traits of character gaining upon a portion of our fellow citizens, who are as virtuous and valuable a race of men in all other respects as can be named in the world; but it is gratifying also to observe the contrast afforded by the state of living, and by the opinions common to the same people, upon some particular properties. The stranger, after residing for weeks on an island containing many thousand inhabitants, after conversing with all ranks, and making every proper inquiry into the management of the districts, hears only the language of praise. That language is indeed varied and modified, according to circumstances; but still it is limited between the bounds of calm approbation, and those of rapturous applause and gratitude. He is told that the proprietor understands business,

ness, and finds the discharge of his duty to himself, to his tenants, and to his country, combine to promote his interest; and that therefore he gives reasonable leases, raises his rental gradually and moderately, prefers the best mien he can find in all the stations in his power, imposes no vexatious clauses or stipulations upon his tenants in their leases; but, on the contrary, improves the soil and climate by planting trees, and constructing drains, and teaches them to turn their lands to the best advantage, as a friend and father would do; oppresses no man; scorns deceit and duplicity; and, in a word, proves both by precept, influence, and example, an ornament to society, and a blessing to his grateful people.

The same stranger crosses the ferry to another island. How sadly is the voice of the Hebridian tenant reversed! He learns with regret, that many hundred families or individuals pine in misery, without either the power of earning a comfortable livelihood where they are, or the means of procuring situations elsewhere. They are tenants at will, without leases, without definite boundaries of landed possessions, without any thing, excepting debts, which they can call their own; and, alas! without any prospect before them but beggary and the grave.

The number of farmers or possessors of land, and not proprietors, in the Hebrides, amounts to about twenty thousand; of whom three fourths, or fifteen thousand, with their families, depend entirely upon the produce of their rented possessions, and subsist for nine months of the year chiefly upon potatoes. No portion of Great Britain maintains such a population at so cheap a rate; and none has supplied so liberally to our army and navy
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the very best men of which they consist. The proportion of Hebridians who earn their livelihood by trade, fisheries, or manufactures, is surprisingly small, and by no means on the increase.

One great want over all these districts, is that of employment for the men in winter, and for the women and children all the year round. On some of the isles, it is true, the first mentioned, manure their lands with sea weeds in the winter months, and the unhappy females are obliged to submit to the most laborious and degrading occupations, such as carrying burdens of manure, peats, &c. upon their backs ; but no regular or truly feminine employment is followed by them ; and accordingly they too often acquire slovenly, indolent habits, and appear to be depressed in mind and deformed in person, by constant fatigues unsuitable to their sex.

In consequence of the disadvantages now enumerated, the common run of Hebridian tenants strikes a stranger rather in an unfavourable light ; and that first impression is not removed without making due allowances for the embarrassments and hardships with which they have to struggle.

The Society for Propagating Christian Knowledge in the Highlands and Isles, and of the royal bounty, (a donation of L.1000 per annum destined to a similar purpose,) have unquestionably done much towards the moral improvement of these regions ; and it is not here intended to deny that they have produced a favourable effect, upon the whole, on the common Hebridians. But their efforts are not uniform, or perhaps such as an unbiassed spectator would deem judicious. In cases, for instance, where the landlords are averse, either out
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of niggardliness or policy, from procuring education for their tenant's families, the society in question leaves all religious and moral instruction to the care of providence. Wheresoever the proprietor contributes nothing, and where, of course, the unfortunate natives have greatest need of the benevolence and aid of the society, every help is refused, and even the schools, which were upheld during the lives of the preceding and better landlords, are removed; the wretched natives are consigned to ignorance of this world and of the next. Why? Because it is a rule with the society to allow a stated sum for every schoolmaster yearly, who shall enjoy a house, fuel, cow's grass, and a piece of ground gratis from the Lord of the manor; and because, where the last mentioned great man is disposed to keep his dependants in ignorance and slavery, or chuses to pocket a dozen pounds annually rather than have them otherwise, the society will not interfere with his plans of political economy, but extends its liberality to quarters where it is more splendid and superfluous*.

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* The expressions here used are copied literatim from a note written by one of the most intelligent and accomplished gentlemen in the Hebrides. He mentions instances of parishes and districts, especially in the Long Island, (excepting Lord Macdonald's property,) where education is at a miserably low pass indeed, and where *thousands*, willing to learn, remain in total ignorance from the want of schools. We are very sorry that his description was entirely consistent with the actual state of these districts in summer 1806, and that we cannot as yet have the pleasure of bestowing that unqualified praise on the society alluded to, which many of its members have always deserved.

AFRICAN
LIBRARY PHIL

The clergy are often blamed for inattention to the education of the lower classes, and we fear, in some instances, with reason; but it is not easy for them, in their dissevered and remote situations, to arrange, and it is extremely difficult to execute, any effectual plans of improvement. Yet this is, of all others, the most dismal inconveniency under which the Hebrides groan. It bars the way to agricultural, as well as to moral and political advancement, and certainly merits, in every point of view, the most serious attention of church and state. Impartiality, and a desire of doing good, will oblige us to mention in this report, in their proper places, those islands whose inhabitants suffer most severely from the want of education; and we trust that the Society for Propagating Christian Knowledge, and all other societies connected with our national welfare, will use their influence towards removing an evil so pregnant with danger and disgrace to our country.

Expressions like these may probably seem exaggerated and intemperate to persons unacquainted with the Hebrides and west Highlands, to both of which regions our present reasoning equally applies. But the man who considers that, out of a population of nearly 400,000 souls, yielding at least *twenty thousand* soldiers and sailors to the British Empire, there is not above *one* in *twenty* who can read or write, or who is attached to his country by any other ties than merely those of habit and of name (which are daily diminishing in force) and who is therefore liable to the seductions of every artful impostor, both with respect to politics and to religion; and above all, who fancies (*as they all do*) that the Highlanders could, if united, conquer

quer the rest of the British island, and defeat any army in the world:—The man who reflects on these things will not talk lightly of the matter. He will wish from his heart to give these people, by a suitable education and some security for their possessions, a stake in their country, and a rational and manly patriotism, founded upon a consciousness of the advantages which, as Britons, they enjoy; advantages which, they ought to know, they must for ever forfeit, if they remove to foreign lands, or sacrifice, with impious fury, to vain theories of reform, the glorious constitution in church and state, which is the fundamental happiness of Britain, and the envy and admiration of the world.

SECTION III.—RENT.

SPECULATIVE men have amused themselves by calculating what proportion of the gross produce of land ought to be paid to the proprietor as rent; but circumstances vary so much that no specific proportion can perhaps ever be fixed. Joseph condescended upon one-fifth of the gross product of arable land for his master Pharaoh's rents *, meaning the other four-fifths

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* Genesis, Chap. xlvii. ver. 23, &c. Then Joseph said unto the people, Behold, I have bought you this day, and
your

to suffice for the farmer's seed, labour, maintenance, and provision for his family. .

In our times many landlords take one-third, or even nearly one-half of the produce, as rent ; and it is obvious that, in some cases, it may be more equitable to take one-half than in others one-fifth. A kelp farm, for instance, on which one hundred tons of that commodity may be manufactured, at the rate of two pounds per ton, receives at market fifteen pounds clear profit, after paying freight and insurance, &c. per ton,—i. e. fifteen hundred pounds profit, with only a deduction of two hundred pounds, the manufacturing price : Of the thirteen hundred pounds resulting as the farmer's profit, he has only the fifth of the total produce, or the price of twenty tons at eighteen pounds per ton, or the sum of three hundred and sixty pounds to pay as rent. He pockets nine hundred and forty pounds *per annum*.—Comparing a farm of this description with either an agricultural or pastoral one, we shall find the relative expences and the circumstances so very different, that no general rule can be laid down for them.

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your land, for Pharaoh, lo! here is seed for you, and ye shall sow the land.—And it shall come to pass in the increase, that ye shall give the *fifth* part unto Pharaoh: and four parts shall be your own, for seed of the field, and for your food, and for them of your household, and for food for your little ones, &c.

A Keip Farm.

Creditor.	Debtor.
Tons.	
100, at L.18, L.1800.	To making 100 tons,
	at L.2 - L.200 0 0
	To freight, insurance, &c. at L.1 100 0 0
	To utensils, risk, & other incidental charges, at L.2 200 0 0
	<hr/> L.500 0 0
Gross produce - L.1800 0 0	
Cost - - 500 0 0	
	<hr/>
Farmer's gross profit L.1300 0 0	
Deduct 1-5th of L.1800 360 0 0	rent paid the landlord.
	<hr/>
Leaves - - L. 940 0 0	nett profit.

An Arable Farm.

Creditor.	Debtor.
Bolls.	
1000, at L.1, L.1000.	Labour, 1-5th, L.200 0 0
	Seed, 1-5th, 200 0 0
	Maintenance, 1-5th, 200 0 0
	Rent, 1-5th, 200 0 0
	<hr/> L.800 0 0
	Gross
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Gross produce	L.1000	0	0
Cost or expence	800	0	0

Leaves L. 200 0 0 or 1-5th for the farmer's family.

From this short comparison, it appears that the kelp farm enables the occupant to draw more than one-half of the gross produce as provision for his family, while the agricultural one affords only one-fifth. It is unnecessary to insist upon any farther elucidation of so plain a proposition.

Land, in the Hebrides, is not always let for money rent, though that practice is daily extending over the best managed of them. In the kelp islands, the small tenants and the subtenants pay for the lands which they occupy with services, and by manufacturing kelp. On some estates they pay much more than the land could yield; and rather, indeed, pay for the employment and the labour which their tenements secure for them, than for the intrinsic value of these tenements themselves. This is notoriously the case almost over the whole of the Long Island. Nor is the existence of this fact any proof of oppression or injustice in the proprietors. Land, in the neighbourhood of all our manufacturing and commercial towns in Scotland, is also let, not in proportion to its real value, but according to the accommodation which it yields; and we find acres not worth four pounds *per annum*, at twelve miles distance from such towns, rented at ten or twelve pounds annually at the distance of only one or two miles. The clamour raised against Hebridian proprietors,

tors, therefore, on this head, is very unfair, for they do no more than what all other landlords in Great Britain practise, and indeed what is perfectly consistent with equity as well as law. It cannot, however, be denied, that in some instances the rents are exorbitant, and the people are oppressed, but these are not numerous, as we shall see when we come to the account of the different islands.

Collateral services, exclusive of kelp manufacture, are rapidly wearing out here as in other parts of Scotland, and will very probably soon disappear altogether. These are the casting, raising, leading, or carrying of peats, lime, and other bulky articles, paying kail fowls, sheep, fish, and wool; spinning or dressing certain quantities of wool or flax, harvesting hay, and shearing corn in autumn, thatching office-houses, &c. all which were stipulations as unpleasant and teasing to the tenant as they were, generally speaking, expensive and unprofitable to the landlord. It was absurd to consider them as forming no part of the rent; for the incoming tenant always stipulated for his farm in the full recollection and irritating anticipation of every one of them. Rents are paid usually at Whitsunday and Martinmas, the periods at which the tenant enters upon the enjoyment of the grass and corn lands of his farm.

On the kelp estates the land is almost entirely sacrificed to that manufacture, and is at best, with regard to its agriculture, in a stationary condition. The months of May, June, July, and the first three weeks of August, are devoted to kelp-making, or to shipping it. The sea weeds, which constituted nine-tenths of

the manure commonly used, are burnt into kelp, instead of being laid upon the land; the potatoes and other crops are neglected, and consequently choaked with weeds; the cattle commit great depredations upon infield corn and grass, in consequence of the total want of inclosures; mill-dams, and other canals, are overgrown with rank grass and weeds, so that the autumnal rains deluge the best fields of every farm; the contradictory and incompatible labours of securing fuel from the peat-mosses, of shipping off kelp, of cutting and securing hay and corn, of building folds for cattle, of attending cattle-markets, and repairing house-thatch, march-dykes, and what are called inclosures—throng all at once upon the farmer in the months of September and October, when the Atlantic pours his incessant storms and torrents upon his head. He despairs of overtaking the innumerable demands upon his industry, and sinks into a stupor and neglect, in which the horrors of winter always find him. In this state of agriculture, the land is considered as of no further value than merely to accommodate the kelp manufacturers with some milk, a few carcasses of lean sheep, horses, or cattle, and a wretched crop of barley, black oats, and potatoes. Turnips, and all other green crops demanding attention in summer, are (excepting potatoes) quite out of the question.

The average rent of land in Gigha, Islay, and Colonsay, and in those portions of Mull and Skye which are not possessed of kelp, may be estimated at four or five shillings per Scotch acre. No land in the Hebrides, excepting in the immediate vicinity of Stornoway, in Lewis, lets so high as one pound ten shillings
Sterling.

Sterling. At Stornoway, some inclosed fields let at two pounds annually, without leases; but this rent is paid for the accommodation of working horses, or for potatoe plots for labourers, rather than for the intrinsic value of the land.

Very few estates have hitherto been let at rack-rent, or offered either publicly or privately to the highest bidder. The old tenants are kept on most of them, and that too often to the detriment of agriculture, and to the heavy loss of the proprietors. It is true, that nothing inherent in their natures, or nothing that may not be surmounted by the exertions and example of a good master, stands in the way of the common Hebridian tenants improvement; but it must be confessed, at the same time, that such improvement cannot be expected to advance *with rapidity* among the present race. Shawfield's lands, and the properties of Gigha and of Collonsay, are evidences of what may be made of Hebridian tenants, and of the compatibility both of high rents, and of the gradual amelioration in condition, as well as of the increase in numbers of people, on Hebridian estates.

In general, some clauses and prestations in ordinary leases, to the following effect, will prove highly advantageous both to proprietors and tenants, viz.

The tenant is supplied with timber for building his house and offices, and gets melioration for all stone and lime work carried on with the proprietor's consent.

The tenant receives a premium per acre for every species of wild land reduced to tillage.

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He is not to subset his lands without the approbation of his landlord: not even to his own children. This will prevent too minute subdivisions.

He must not repeat the same crops, or any sorts of white crops, so as to exhaust the land; but either fallow, or cultivate green crops.

He ought to raise most of his potatoes on waste land: peat-mosses and moorish grounds are well adapted to that purpose.

He must not thatch his houses with straw, but with heather, fern, rushes, reeds, or any other convenient substitutes.

He must preserve undamaged the landlord's inclosures, drains, and plantations, under the penalty of forfeiting his lease; and be bound to inclose a specified quantity of ground during the currency of that lease; for which he shall be paid at the expiry of it, should he leave his farm.

He must not destroy salmon, or other fresh water fish, in the spawning season, or suffer others to do so on his farm.

He must raise a certain quantity of flax or hemp, and have a kitchen garden.

He must not keep useless dogs, vicious bulls, or suffer any such on his farm. He must keep steady and attentive herdsmen.

Rents should unquestionably be paid at least nominally in money. All other denominations or modes of payment are vexatious or oppressive. Where it is impossible to procure labourers in the common way for certain wages per day, the landlord must contrive to have a proper number of cottars, on whose work he
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can rely. These ought to be regularly paid in money or by a note of hand of their master for the time they work under the inspection of his grieve or directing servant, and never have their earnings confounded with the rent which they may be bound to pay him at the year's end for their possessions. Their names should be marked down in a book kept by the grieve, and opposite to such names may stand, the days, the hours, the quantity, the quality, wages, &c. of their labour, all the year round; of which they should always have a sight on demand. It is astonishing to see what an encouragement to industry this simple and fair expedient has proved on the estates last mentioned. In Gigha and Collonsay, dykes are built, drains are constructed, hedges reared, and cottages, roads, and bridges, erected and repaired with amazing regularity and cheapness on this plan. No labourer need lose an hour in the whole season; and when any thing belonging to his own tenement demands his particular attention, his master grants him full liberty of absenting himself from his work, knowing that ready payment for every hour, which he works for him, will soon bring him back again. These cottars too have their option of working by the piece at a stipulated price, or by the hour at a certain rate per day. The rent which is fixed upon their tenements they pay in fact by their industry, (the very best medium possible,) but nominally in money; and when they settle at the year's end with their master, they receive a very handsome balance in cash, the precise amount of which they may see in the books kept by the grieve on the estate. Persuaded that they cannot be cheated or over-reached, and certain of being paid

paid for every moment industriously applied, the Hebridian, proverbially lazy and unsystematical in other situations, seems by the management here recommended to change his very nature. He is punctual in paying his debts; perseveringly and skilfully industrious, and, in one word, as good a labourer as if he were bred in York or East Lothian.

SECTION IV.—TITHES.

No tithes are paid in the Hebrides, or, indeed, in any part of Scotland, and therefore we abstain from any reasonings upon them. The provision made by our laws for the maintenances of the clergy is deficient in almost every instance in these isles, and accordingly every clergyman is under the necessity of becoming farmer or drover, (cattle-dealer,) for the maintenance of his family. The Hebrides were, for the most part, *valued* in the seventeenth century; and the ministers of the different parishes have no legal claim to more than the fifth part of that valuation. The valuations were made at the instance of the proprietors, who were to pay all public burdens in proportion to the amount of them: They were of course as low as possible, so that the livings in question were even *then* small, though comparatively, at least *four times* their present value. The parish of North Uist pays the minister 1200 merks
Scots,

Scots, or L.66. 13s. 4d. Sterling, per annum, while its present rental may be estimated at L.10,000, *i.e.* the rental is to the tithe as one hundred and fifty to one. In Essex the rental is to the payable tithe as four and a half to one, and in some parts of England still less*.

SECTION V.—POOR-RATES, AND OTHER PAROCHIAL TAXES.

THERE are no poor-rates, in the *English* sense of the expression, established in Scotland. A parochial assessment may be enforced in case of necessity; and one half of the sum deemed requisite for the maintenance of the poor, must be defrayed by the land-owners or heritors of the parish, and the other half by the rest of the householders. The minister and kirk-session can prosecute the heritors and other parishioners for their shares of this provision for the poor. It is defrayed in proportion to the valued rent of each individual's property. This regulation was passed into a law in 1740, and has been frequently acted upon. The fund so raised

* Government has very humanely taken the case of the poorer clergy into consideration lately; and it is intended that no stipend in Scotland shall be under L.150 Sterling.

ed is distributed among the poor by the minister, elders, and kirk-session. In the Hebrides, such assessments have not yet taken place; and the poor are supported by voluntary donations, by alms granted to them as they beg through the country, by collections made for their behoof on Sundays and sacramental days in the churches, by mort-cloth or pall dues, by marriage-livelihood dues, (which by the way ought to be abolished,) by fines levied from delinquents in the church courts, &c. and by allowances from some proprietors and their relatives who attend to the claims of reason and humanity. It rarely happens, indeed, that the poor suffer severely. The people are very charitable; and although most of the great landed proprietors, and many of the smaller are non-resident, yet they themselves or their ladies allow some stated provision annually for the maintenance of their poor. Beggary is reckoned disgraceful; and accordingly the number of beggars is small in comparison to what it is in other parts of our empire. There are not above 1800 individuals in all the isles who take alms or accept of aid from their parishes; and these do not at an average receive above ten shillings each per annum. The small sum of six hundred and fifty pounds annually as poor-rates, from a population of nearly one hundred thousand souls, is perhaps unexampled in any Christian country in modern times.

It frequently happens, however, that resident families are heavily burdened with the supply of clothes and medicines for the poor of their parish, while that duty is entirely overlooked and neglected by those proprietors who are non-resident. We could name many charitable and amiable families, and especially females, who

lay

lay out considerable sums annually in this way ; but, as ostentation has not been their motive, and as their permission to be publicly known as examples to others has not been obtained or asked, we leave them to the applauding voice of their vicinity, and to the dignified consciousness of virtue. It were to be wished, that, in a region where medicines and surgical and medical aid are peculiarly expensive, some general assessment would be adopted for the relief of the poor, and that means could be fallen upon of putting the truly charitable upon a par, in respect of expence towards the poor, with the negligent, the avaricious, and the unmerciful.

In one island and parish, the noble proprietor has this season granted the multures and rents of all the mills, amounting to a sum of near three hundred pounds, to the poor. In some adjoining islands, nothing of the kind took place ; and accordingly the most dismal scenes ensued, in consequence of the great scarcity of provisions which has prevailed.

The parochial taxes which are paid in the Hebrides, besides minister's stipends, are cess, road-money, rogue-money, and schoolmaster's salary. Of all these the farmers ought to be relieved by the proprietors of the ground, who might charge them as part of the gross rent paid for their lands, and thus save their tenants a vast deal of perplexity and litigation.

It is very strange that men so acute and humane as the Hebridians, have not as yet formed any associations or clubs, by subscribing to which for some years a very small sum, they might secure themselves from beggary in sickness and in old age. The sum of sixpence a-week for twenty years, would entitle subscribers to an annuity

annuity of seven or eight pounds per annum in advanced years; an advantage enjoyed by the members of similar societies in other parts of our empire, and surely worthy of attention in a country, of which the natives are peculiarly exposed to accidents, both on account of their remote situation and of their perilous employments.



SECTION VI.—LEASES.

THE general currency or duration of leases, on the few well managed estates, is nineteen or twenty-one years; and those on the second-rate estates rarely exceed seven or nine. The stipulations are equally different. Sometimes they are oppressive and impracticable, and consequently not only pernicious, but ridiculous and illusory; as, for instance, where the tenants are bound upon oath to apply a specified *proportion* of the sea-weeds to manuring their lands, and the rest to the making of kelp; a promise sinful to exact, because it cannot be fulfilled, seeing no man can exactly measure or weigh the produce of sea-weed growing on his shores. Sometimes the stipulations are grossly injudicious and silly, and indeed they are dictated by good sense, or an acquaintance with the country, only on ten or twelve estates. On many isles no leases are given to the small tenants,

tenants ; and these people accordingly, as might be expected, are miserable slaves.

In one of those islands, a poor tenant expressed himself in strong terms against the landlord of the estate, and especially his advisers, and concluded his bitter invective with these words : " The commandments of our GREAT MASTER are only ten in number, and a reward is offered if we keep them ; but those of our insular tyrant here, who is himself well-meaning and easy, are forty-seven (the clauses in his common agreements) many of which are inconsistent with each other, and impossible to be observed ; and all the reward we can expect, is to live slaves, and to die beggars."

In the Hebrides, as in other districts, we meet with anomalies and singularities in point of situation, which proprietors must particularly keep in view when letting their lands. The most striking of these are the following :

Such estates as have large quantities of sand banks near their shores, as, for instance, the Long Island, Coll, Tyree, and part of Islay, do not admit of march dykes, or of any regular enclosures in their sandy districts. An attempt to build any such fences might prove highly dangerous, by loosening the sand, or creating new openings for sand-drift and devastation. To stipulate for dykes in such situations, is therefore, though very common, the excess of folly and of ignorance.

Estates, of which the principal product is kelp, cannot easily carry on any thing like regular agriculture, or effect essential improvements in their stocks of horses,

ses, or of cattle. These two things are, in the present condition of this country, nearly incompatible. The kelp manufacturer must devote his whole time and that of his family to his present occupation exclusively; because the smallest negligence, or the least delay, may expose him to the most serious losses. It cannot, therefore, be reasonably stipulated in the kelp manufacturer's lease, that he shall raise turnips, (which must be sown in June, the busiest month of kelp making,) or any other leguminous plants in regular rotation with culmiferous crops; nor indeed can any landlord look for clean land, well dressed fields, or any conceivable agricultural improvement or excellence from such a person.

It must be obvious to every man who is in the least degree acquainted with the Hebrides, that the form and the prestations of leases must be very different in them from what would be adviseable in the lowlands of Scotland, or in most parts of England. The want of a proper division of labour, the mixture of mechanical, fishing, kelping, or pastoral employments, with that which we strictly denominate agricultural, render the stipulations of ordinary leases extremely difficult or impossible to be performed; and therefore a judicious landlord will, in essential points, accommodate the terms of his leases to the condition of his tenants. The Hebrides being almost completely destitute of timber, and the price of that article being of course enormously high, it is vain to insert clauses in the common tenants leases binding them to build substantial houses or offices, unless the landlord himself supply the wood, iron, and the house carpenter's work.

Roads

Roads are badly made and ill repaired over all these Isles, excepting Gigha and Islay: Fuel cannot therefore be carried from the moors in less than quadruple the time that would otherwise suffice; and accordingly more horses must be kept by the tenants than can be conveniently accommodated on their farms. The best and driest fields are poached in searching for paths for these horses while carrying peats; enclosures, or what are so called, are broken down, and every species of injury done to the land, while the teasing business of securing fuel is prosecuted: and, therefore, until proper roads are made, and the peat mosses fixed and subdivided, no obligations in leases can avail respecting the abuses in question.

The last particularity which we shall mention, as precluding ordinary stipulations in leases, relates to agricultural implements and the tillage of the land. In some of the northern isles the instrument called *cachrom*, or crooked spade, supplies the place of the ploughshare. It would be cruel and unwise to insist upon the tenants relinquishing this tool all at once. We shall hereafter see that it may be employed with advantage in certain situations, and that it is by no means so contemptible as it has sometimes been represented. At all events, the banishment of it must be gradual, and follow the introduction of draining, of trenching, blasting, and other agricultural improvements. The same reasoning will apply to some other implements of husbandry, which will deserve our attention in their proper place.

Enclosing, draining, roads, and bridges, are at such a low pass in this country, that proprietors run no risk of suffering any injury by granting handsome meliora-

tion for them to their tenants at the expiry of their leases. Clauses to that effect would do more to improve their estates, and promote the welfare of their people, than all the penal stipulations which they can devise. Encouragement must attend every positive good, either done or expected ; and punishment should not be held out to view, but from the most powerful motives of justice and expediency.

So much has been written upon leases of late years, and especially since the institution of the Board of Agriculture and the first publication of the Farmer's Magazine, that perhaps little or nothing new need be added upon the subject. It is generally allowed, that the plainer and fewer the conditions are, and the simpler the prestations on the part of the tenant as well as of the landlord, the more efficacious and satisfactory will the lease prove to both parties. This is universally true in districts where agriculture has made considerable progress, and where a multitude of competitors, a respectable floating capital, and every requisite for the appreciation and the advantageous enjoyment of land are common : but it is not always so in the Hebrides. The proprietor who wishes there to consult his own and his peoples best interests, must act with great care in granting leases. He must study the characters and the habits of those with whom he deals. They ought indeed, in every case, to be treated with kindness and humanity ; but at the same time with firm discrimination and judgement. Former habits of sloth and irregularity must be represented to the people in their true light, as infallibly leading to poverty and contempt. New men must here and there be introduced. The old tenants must
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be enlightened, roused, nay almost compelled, to consult their own and their landlord's benefit *. Long leases to them, in most cases, would be long indolence : cheap farms would foster laziness, and exclude every motive to exertion : gentle and soothing conditions would often produce contempt for those who granted them ; and such terms as in many parts of Scotland would be sufficient to nourish ambition and prompt to rapid improvements, would here leave many a careless Hebridian in the same unimproved state with his great grandfather before the revolution of 1688.

It is not, therefore, expected that those landlords should always grant long leases, or leases without some strict conditions and stipulations binding upon their tenants. All that the best friend of this extensive region can wish, both for the people of the country and for the proprietors, is, that leases of tolerable length, *i. e.* from 15 to 25 years, should be always granted to every denomination of occupants ; that the conditions

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and

* Mr Maclean of Coll insisted upon some of his tenants dividing among them the lands which they formerly held in common, or run-rig, and which they were accustomed for ages to divide annually by lot, for the purposes of cultivation. They obeyed with very great reluctance, and each tenant had his own farm to himself. Three or four year's experience has convinced them now, that their landlord acted wisely ; and the whole of his tenants solicit eagerly the very thing which they lately considered as an act of tyranny or of oppression. The same thing happened on various other estates, and especially in Mull, Tyree, and Skye.

and prestations be as *few in number*, and as *clearly expressed* as possible ; and that every one of them may naturally and evidently tend to the ultimate advantage and *profit* of the *tenant*, while, at the same time, they benefit the estate.

To this must always be added, the utmost attention to the character of the tenants, and the inflexible resolution of never granting a lease to a man of bad reputation. This evil can only be avoided by abstaining from the custom of setting lands to the highest bidder, by auction, or by private bargain. Such a mode may, indeed, comparatively do little harm in lowland districts, where the population has many ways of disposing of themselves. For obvious reasons, however, it is equally cruel and pernicious in the Hebrides : cruel to the poor people who have no resource but overbidding each other, and pernicious to the country and the proprietors, by giving lands to profligates, bankrupts, and imposters.

It appears to us to be preposterous to have two distinct series of obligations imposed upon tenants, respecting the same farms, as is done of late in a large portion of the Long Island. One series regards the management of the land, and the other the manufacture of the kelp. The last mentioned obligations have been enforced, too, during the currency of leases which contain only the first ; a procedure which cannot be named but in terms of unqualified reprobation. These obligations are also in some respects incompatible with one another, and place the tenant in the miserable and distressing dilemma of either essentially hurting himself or of injuring the landlord. He must in honesty, and consistently

consistently with his obligations to the proprietor, manufacture as much kelp as possible, while his corn, fuel, hay, and cattle, on which most of his comforts and profits depend, are neglected and sacrificed. This embarrassing collision between a man's duty and his interest, is a certain proof of bad management. There is no instance in which the landlord's advantage and that of his tenants, if both are well understood, do not coincide; and the attempt to separate them, or to increase the one at the expence of the other, generally proves fatal to both. Leases granted with these considerations in view, and for a suitable number of years, are a great desideratum in the Hebrides. They are the best means of improving the country, and consequently of increasing the population and promoting the advancement of this part of the kingdom. The want of them is the most fruitful source of emigration and distress. It perpetuates slavery, discontent, slothfulness, and despair. The Hebridian cannot appear to advantage, while deprived of that stimulus to exertion, so necessary for counterbalancing the numerous disadvantages of his situation, namely, the stimulus of independence and the hope of a speedy reward. It ought also to be considered that this system redounds still more to the benefit of the landlord than that of the tenant. The island of Islay is a remarkable proof of what good management may do, both with regard to Hebridian land and Hebridian character. That country and people have totally changed, and all to the better, since they came into the hands of their present master. May others take the good example, and extend over their estates those agricultural improvements, and among their peo-

ple that happiness and comfort, which now distinguish Islay among the Hebrides, as the seat of active industry, and as the property of a judicious and beneficent landlord !

SECT. VII.—EXPENCES AND PROFIT.

IN no district of Britain are expences and profit so precarious as in the Hebrides. They admit of no certain rules, or even of description. Information on such subjects cannot be implicitly trusted. Results are too often assumed in the first instance, and facts are then detailed in the view of substantiating these results, without much attention being paid to their accuracy. Misrepresentation with respect to expences and profit is accordingly more frequent on agricultural than on any other department of human enquiry. Such misrepresentations are extremely pernicious, both because they lead to unreasonable demands on the part of the proprietors, and to various errors and miscalculations on that of the tenants. Common sense dictates, that expences and profits must incessantly vary according to the characters of the parties connected with them ; that the same master on the same farm, and in an equally favourable season, may, by merely changing his grieve, or principal servant, or herdsman, incur double the expences

pences, or realise double the profits which he was wont to experience ; and therefore that all our reasonings on this subject must be very gratuitous and vague. On conversing with the proprietors of Hebridian estates, even the most rational and enlightened, we generally found an exaggerated opinion of the value of their estates, and a degree of regret strongly expressed that their properties are not turned to a proper account, and that their people are peculiarly lazy or intractable: and on the other hand, on asking the opinions of the best informed farmers and merchants, we met with calculations, apparently plausible and fair, which would directly lead to an opposite conclusion.

To write down such contradictory calculations, and transmit them gravely to the Honourable Board, would be a most impertinent species of trifling; and to publish them as agricultural facts, would be an insult to reason, experience, and veracity.

It cannot, however, be denied, that Hebridian properties, generally speaking, are not as yet so productive to the landlords as lands of the same intrinsic value in less favourable situations in other districts of our country ; but many collateral circumstances must be attended to, before the blame can be laid upon the tenants. We were all along astonished at the rapid changes and great rise of rents which have taken place within the last 20 or 30 years ; also at the purchase price of lands in these isles. On enquiry we found that this rise of rents is not uniformly in consequence of expensive improvements carried on by the proprietors, or of any stipulations in leases favourable to their tenants ; but merely from the enormous demand for possessions of
land

land, the natural effect of increasing population in the country, and also of the singular propensity of Hebrilians of every description for such possessions, at whatever price they may be procured. Were a candid stranger to compare the real state of the profits and expences of a Berwickshire or Norfolk estate, with those of an Hebridian one of the same value, for a period of 50 or 60 years back, he would be astonished at the result. In the former, with much trouble and persevering labour, and by large sums of money laid out in improving the soil, in building farm houses and offices, in planting trees, &c. this object was attained ; while in the latter, neither trouble nor expence of any consequence have generally been incurred. In other words, all the rise of rents, (and these are frequently five to one within 30 years past,) has been clear profit in three fourths of the Hebrides ; while in the best improved districts of England and Scotland, tripling the old rents has cost sums, dedicated to improving the respective estates, which, reckoning legal interest for the money so expended, would reduce them at least one third. We need not then wonder at the present state of the Hebrides, and their backward condition.

The only subjects on which we can venture to give our opinion, as founded on undoubted information and experience in those regions, on the head of profit and expence, are the two following, viz. 1st, Whether the profits of kelp, compared with the expence to the estate and to the public, are such as to render the extensive prosecution of that manufacture advisable ? and, 2dly, Whether the substitution of sheep for black cattle on the pastoral Hebrides, is likely to redound to their

their general advantage?—1st, With respect to the manufacture of kelp: The advantages are great and numerous. At least 15,000 souls are directly or indirectly concerned in it. These are regularly employed during the summer months, and earn by their labour enough to pay the rents laid upon the lands which they occupy. Good workmen earn L.5 Sterling during the summer months; and women and boys L.3. Should they be able to sell a few cows or sheep, the price is their own; and it sometimes happens that a balance is due them by the proprietor for having manufactured more kelp than suffices for paying their rents. Nor is this all:

In seasons of scarcity, when other estates, producing no sea or kelp weeds, are distressed for provisions, and when, perhaps, cattle and sheep are in little demand, (as for instance in 1808,) the condition of the small tenants is deplorable over the greater part of the Hebrides; but the kelp proprietors can afford meal to their tenants from the profits of that manufacture, and that too at the very season of the year when famine most frequently visits those parts.

Lord McDonald's Uist estate, that of Clanranald, of Mr Hume of Harris, &c. are accordingly never so severely afflicted by want as the isle of Skye, Mull, and some other Hebrides which produce little or no kelp. The manufacture, too, is carried on in summer, when the people enjoy most leisure, and when, on some of the islands where kelp is unknown, they loiter away in idleness the greatest part of their time.

Industrious habits are gradually acquired by men formerly unaccustomed to any regular employment; and these

these people are in a few years converted from a state of comparative uselessness into excellent workmen, and persevering and steady labourers.

To all this we may add, that the manufacture in question brings into the Hebrides, or at least into the coffers of the Hebridian landlords, from L.60,000 to L.80,000 per annum.

The *enemies of kelp* maintain, on the other hand, that the best season of the year is sacrificed to it; that the manufacturers can attend to nothing else, (in spite of the long days of good weather,) from the beginning of May till the end of August; that peats, corn, potatoes, houses, cattle, every thing must be neglected, which could tend to the improvement of the country or the comfort of the people; that the fisheries are ruined by diverting from them the hands and boats which would otherwise prosecute them with success; that, to the incalculable loss of the revenue and resources of Great Britain, the great body of seafaring Hebrilians are now metamorphosed into slavish kelpers; that the sea weeds, which constitute the only attainable manure for improving the soil of one half of the isles, are lost to the ground, and perverted to a manufacture which indeed brings some money in the mean time to the proprietors, but which in the long run, by impeding all agricultural improvements, must prevent the rapid advance which these estates would otherwise make, and must redound to the severe loss of their landlords: that to sacrifice the soil to the precarious supply of a commodity which fluctuates yearly in price, and for which some cheap substitute may soon be invented, must eventually ruin both landlords and tenants: in
short,

short, that this most laborious and slavish mode of employment, destroys the bodies and minds of the people, without essentially benefiting the estates themselves, &c. It is certain that, there is much truth on both sides of this question. With regard to agricultural improvements, the kelp manufacture must be confessed to oppose many obstacles to them. The tenants are under the necessity of keeping more horses, (perhaps double the number otherwise requisite,) than their farms can conveniently accommodate; and these horses with their accoutrements, however mean and paltry, constitute the most serious part of their expences. The kind of horses best adapted for carrying sea-weeds from the places where they are cut to those in which they must be dried previously to burning them into kelp, is too small and weak for the plough or the cart. Horses fit for these, could not make their way, without extreme danger, through the cliffs * of rocks, and over such shores as constantly occur in the Hebrides. A particular sort of horses must therefore be maintained, at a very high expence, for the sole purpose of making kelp, and which would otherwise make way for an improved and useful breed, such as we meet with in Islay and a few of the more improved Hebrides. The months of the year particularly proper for securing fuel, for draining, enclosing, fallowing, preparing the ground for a course of cropping which nature and reason

* Asses and mules have not as yet been tried, although there can be no doubt of their answering much better than horses.

son recommend in this county, *i. e.* grasses, flax, hemp, turnips, and potatoes, &c. and for weeding, hoeing, and dressing them, are all spent on the manufacture of kelp. Houses and offices, roads, bridges, and all public works, must yield to the same enemy: and as for fishing, navigation, and trade, they are entirely out of the question.

As a proof of the injurious effects of the kelp manufacture, it may be mentioned, that the agriculture of the islands on which it is carried on to any extent by the tenantry of those islands, is in a very miserable state, and has made no progress in comparison with that of those isles in which no kelp is made. Lewis, and the greater part of the chain called the Long Island, particularly distinguished for this manufacture, are far behind Islay, and even Mull and Skye, in the essential parts of Hebridian agriculture. This is the more to be regretted, as that chain contains perhaps more arable land, and that too of tolerably good quality when manured with sea-weeds, than any other portion of these districts, and might by good management be made the granary of Inverness and Argyle.

Having thus stated what is urged on both sides with regard to the expence and profits of kelp, in the comprehensive meaning of the expression; it is but justice to the proprietors to mention, that they generally study to promote the welfare of their kelp manufacturers, and that they have begun of late years to separate the business of kelp making from that of farming, as far as such separation is practicable. On Mr M'Neill of Collonsay's estate, and on a few others, labourers were hired at high wages, viz. 9 shillings each man per week, and

2 pecks of oatmeal at 2s. per peck ; or about 2 shillings Sterling each man per day, for the whole summer. These men were able to support their families comfortably, when their neighbours were starving by reason of the dearth. On other estates a handsome sum was paid the manufacturers per ton of what kelp they delivered on board the vessels hired by the proprietors for carrying it to market. This was Mr McNeill of Barray's plan, who paid his manufacturers in some places 4 guineas per ton, while many of his neighbours only paid theirs from thirty to fifty shillings. On such large estates as Lord Macdonald's, Seaforth's, Harris' and Clanranald's, it would perhaps be impossible to separate the manufacture of kelp from operative farming ; and indeed it is not easy to suggest any method of management, against which strong objections may not be urged. Those require as many kelpers as the land can maintain. That land is professedly *sacrificed to the kelp*. In no other way would it yield such great and ready returns as the kelp yields at present. These returns are so considerable, that neither the soil, nor the sheep and cattle which the lands would rear, could afford one half of their amount. An immense diminution of rent, therefore, must in the first instance be endured, before a fair trial can be made, or a comparison drawn between the produce of the estates alluded to, under an improved agricultural system of management, and under their present kelp manufacture.

Fortunately for the proprietors, however, as well as for their people, the kelp Hebrides may be gradually improved in their soil, without losing the advantages derivable from their kelp shores. They are all confessedly

sedly improving in population, and in some cases overstocked with inhabitants. Why not employ a certain proportion of the population, and no more, in making kelp; and bind the rest alternately, in regular rotation, to repair the enclosures, drains, and houses, to cast and manage peats, and dress and clear the lands, and, in a word, perform all the farming duties of the kelpers, during the months in which they are necessarily engaged in that business? May not the proprietors employ their stewards and ground officers in providing for the good management of the different farms during the kelp season, in the same way as they do for the lands immediately in the landlord's own natural possession? This system, we must allow, is by no means a perfect one, for the tenants who must work for their neighbours cannot be expected to work well, or so regularly as they would on their own possessions; but, although imperfect, it appears to be the only feasible plan which can conveniently be adopted on the large kelp estates*.

2dly, Ought sheep to be more generally used as grazing stock in the Hebrides than they have been hitherto, and in preference to black cattle?

It depends much on circumstances connected with the ground, with the climate, the distance from the mainland, and from markets, and with the nature of the grass, whether sheep or black cattle ought to be preferred. Where there is a vast range of rugged ground,
extensive

* It is with diffidence that this hint is ventured. We shall touch on the subject more particularly when treating of the Long Island by itself.

extensive mountainous tracts, much heather, and but little arable land, a sheep stock will always be the most profitable. If the climate is severe in winter, and if the summer heats prove annoying in the vallies, sheep are also advisable. Where most of the grass is found in the clefts of rocks, while the extensive slopes and moors are covered with heather, sheep alone can either subsist, or ameliorate the quality of the pasture. There they are peculiarly proper. With regard to markets, sheep can easily and conveniently be conveyed to considerable distances by land; but they are a very bad sea-faring stock. A few long ferries injure them greatly: a very long one in bad weather often proves fatal to whole cargoes of them, while cows and horses, with the same accommodations, remain uninjured. From these facts it appears that sheep may be introduced pretty generally into the following islands: viz. Arran, Jura, Mull, Rum, part of Skye, especially Strath and the Cuillin mountains, Harris, and the hilly districts of Lewis, and the eastern sides of South and North Uist. To their extensive introduction into the Long Island, however, the boisterous and tedious navigation to the continental markets is a very serious objection.

Islay and the smaller isles cannot afford room for sheep walks, and are much better under a black cattle stock.

Expences and profits cannot possibly be estimated further than by mere guess in the present fluctuating state of the markets in these districts. The average rent, which is perhaps one half of the total profits of Hebridian farms, amounts to 25 shillings for every *cow and followers*, i. e. one three, one two, and one one

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year

year old, with the dam ; and 5 shillings for every *sheep with followers*, i. e. one two, one one, and one lamb, (or two lambs, as often happens) ; which rent of 25s. for cows, and of 5s. for sheep per annum, is often miserably ill paid, and may justly be reckoned a high rent for lands in the sequestrated situation of the Hebrides.

One article of expence which must be incurred by nine-tenths of the more remote insular farmers, and of which tenants in other countries have no idea, is a boat with its necessary apparatus. No man can keep such boat under L.5 per annum, including the original purchase money, and incidental charges. In the event of serious accidents, (and those happen very frequently), a new boat must be purchased at the price of from L.15 to L.20; for without a boat the Hebridian is in the state of a Norfolk farmer without cart or waggon. The sums of money laid out on this necessary appendage to all farms of any consequence, amount to at least *one-twentieth* of the yearly rent of the isles !!

The most profitable crops at present raised in the Western Islands are potatoes, barley, and flax. These, however, are raised at a great expence, in comparison with what they might cost, were a better system of agriculture adopted, and were the people accustomed to regard the landlord's and their own profit as compatible with one another.

Expences

Expences of One Scotch Acre under the three different Crops following, viz.

<i>Flax.</i>	<i>Potatoes.</i>		<i>Barley or Bigg.</i>	
	L.	s. d.	L.	s. d.
Tillage	-	1 10 0	-	-
Seed	-	4 10 0	-	0 10 6
Weeding	-	1 16 0	-	1 10 0
Plucking up	-	1 16 0	-	1 10 0
Watering	-	1 1 0	-	0 12 6
Spreading and bleaching	-	1 10 0	-	-
Dressing & scutching, &c.	-	6 6 0	-	-
Total	-	18 9 0	-	4 3 0

Average Gross Produce in the Hebrides in 1808.

<i>Flax per acre.</i>	<i>Potatoes per acre.</i>		<i>Barley or Bigg.</i>	
	L.	s. d.	L.	s. d.
32 stone weight at L.1.	32	0 0	-	-
Deduct expences	18	9 0	-	8 0 0
Profit per acre	-	13 11 0	-	4 3 0
				3 17 0

From

From this view of the expence and profits of an acre under the three different crops above specified, it appears that a flax crop would yield more than three times the profit which, on an average of years, we may fix as the common returns from potatoes and barley. Yet flax is not raised in the Hebrides in great quantities; and we are so well aware of the vast difference between the real profit, and that which any ordinary calculation will give us on this subject, that we state the above rather as a specimen of the vagueness and uncertainty of all similar calculations than with any view to ascertain the superiority of flax to any other species of crop raised in the Hebrides *.

Crops of oats are, generally speaking, one pound sterling per acre less valuable than those of either barley or potatoes, but they answer well for old land the first season of tillage, and are valuable on account of their straw.

The returns from seed, (for very little land is cultivated by measurement, but is calculated from the seed sown and the quantity of produce) is nearly as follows :
viz.

* " When the crop is tolerably good, the produce of a single acre may be estimated at L.15. on the field, at L.20 when it comes from the mill, at L.60 when spun into yarn, and at more than L.100 when wrought into cloth and bleached. Thus 1000 acres (which would be but 40 to every parish on the continent) would yield materials for a yearly produce of L.100,000."

SMITH'S Agr. Rep. of Argyleshire, p. 101.

viz. oats three seeds, barley or bigg nearly six seeds, rye seven seeds, and potatoes 12 seeds. It is scarcely necessary to add that these returns are very pitiful indeed when compared with what they might be by good management, and with what they in fact are this very season, as we shall afterwards see, on the improved islands, and on the well regulated farms of the Hebrides.

CHAPTER V.

IMPLEMENTS.

THE state of agriculture in every country may be estimated by the quality of the implements generally used by the people. Where their tools are clumsy and inadequate to the operations requisite for carrying to perfection this first of human arts, we may lay our account with finding every thing else in a backward state. If the materials of which agricultural instruments are made do not abound in such countries, no improvement in the form or construction of them can reasonably be expected. They must be imported from some other quarter, and propagated by imitation. Such is precisely the condition of the Hebrides. The inhabitants, destitute of wood and iron, probably never would have made any change in the rude and simple instruments of husbandry used for ages by their ancestors, had not the rapid improvements carried on of late years in other parts of Scotland, roused them to similar attempts.

On some of the islands we now find as good implements as any in Great Britain ; and on all of them the richer tenants gradually introduce the improved tools of their

their lowland countrymen. There are a few implements peculiar to the Hebrides : of these we now give a short account.

Caschrom, (i. e. crooked foot or crooked spade) is probably the very oldest tool known in these districts. It has been in general use from the most ancient times, and is still retained in the Long Island, Skye, and many of the continental parishes of Ross, Sutherland, and Inverness-shire. In no parishes, however, is it found in exclusive possession of the tillage of the ground, excepting those of Uig and Lochs in the island of Lewis. These have not a single plough, and yet they maintain a population of about L.5000 souls. All their corn, and all their potatoes are raised with the *caschrom*; and it appears that the increase of population in these two parishes keeps pace with that of the adjoining ones, however rapid the latter has been ; a sort of proof, though not conclusive, that the instrument is not altogether contemptible.

It is formed of a shaft or handle of oak or ash, about 5 feet 9 inches long, and strong enough to bear the whole power of the labourers two hands, without bending or breaking. The head of the tool, which is almost at right angles to the shaft, consists of a flattened piece of the same wood, sometimes added and fastened by iron hoops to the shaft, and sometimes a continuation of the shaft, when the piece of wood admits of it by its natural curvature. This head is two feet nine or ten inches long, and about four inches broad, and one inch and a half thick, and armed with an iron coulter of quadrangular form, for penetrating the ground. There is a strong wooden pin fixed at the junction of the shaft

and head, on which the labourers right foot applies the whole power of his body for pushing with two jerks the head of the caschrom into the ground, previously to his turning the clod, which he always does from right to left, walking backward during the operation of turning the successive clods.

The caschrom costs about 2s. 6d. to 3s. and lasts for 10 or 12 years, without any other repairs than perhaps adding a new edge to the iron plate once a-year.

On a careful comparison of different circumstances, in various parts of the Long Island and of Skye, we ascertained that 12 labourers will turn an acre of land in a day with the caschrom, and that so completely, that the operation is nearly equal, in effect of pulverising the soil, to two ordinary Hebridian ploughings. Where the ristle (an implement to be immediately described) is used, ten men can caschrom an acre per day. Supposing each man to be paid 1s. 6d. per day, the tillage of the acre will cost 18s. But the acre which can admit of the plough, may with good management be tilled in a day with four Hebridian common horses, or even with two gearrans, such as are used in Islay, and therefore cannot be calculated to exceed an expence of 10s. Labour by the caschrom, then, on good level land will amount to nearly double the expence of *ordinary* ploughing, and may fairly be stated at triple the expence of the improved tillage practised on the lands of Islay, Gigha, and Collonsay.

The great advantage of this instrument is, that it enables the operator to work in mosses, or bogs, where no horses can walk, and in stony ground inaccessible to the plough. Many districts of Harris and of Skye would
be

be unsusceptible of tillage without it. Its superiority to the common trenching spade, or to any tool which penetrates the ground perpendicularly, is very great, resulting both from the ease with which the operator wields it, and the length of the horizontal clod which its powerful lever enables him to turn over. The 10 or 12 men who can till a Scotch acre with the caschrom, would not undertake two-thirds of the same acre with a common spade, nor would they at all undertake to clear it half so effectually of stones. The caschrom is particularly well calculated for getting stones of from 20 to 200 pound weight out of the ground, and infinitely superior in this respect to any other species of spade that we have seen.

In draining the side furrows of potatoe lazy-beds (unquestionably the best mode of cultivating that valuable root in the greater part of the Hebrides) this instrument is singularly useful. In this operation, and in turning waste ground, a Highlander will work rather more than double the quantity with the caschrom that he will do with any other kind of spade. He can till in one day as much ground as will sow a peck of oats; and if he works tolerably from the end of January till the middle of May, he will cultivate ground enough for supplying himself and a family of six children and his wife, with meal and potatoes all the year round. This is done without any expence, but merely the half crown paid once in 10 or 12 years for his caschrom.

The tillage is reckoned more productive than what is done by the plough; and I am informed, even to the

the length of *one fourth more*. When the crop fails, however, it fails totally *.

Many parts of the Hebrides, especially of the granite range of the Long Island, with its numerous islets, which contain a large population, would scarcely admit of cultivation by any other instrument hitherto used, and in them therefore the *caschrom* proves peculiarly useful, and promises to maintain its ground for many years.

It is not improbable that this tool, of an improved form and of more perfect construction, might be successfully introduced into our West Indian colonies, especially those islands whose surface is somewhat similar to that of the Long Island of Scotland †.

The best *caschrom* is found in the island of Bernera near North Uist ; and, indeed, in the whole district of Harris to which that island belongs, this instrument is used to better purpose than any where else. The returns of barley have been 25 fold, and of potatoes from 38 to

44 :

* This fact has been uniformly and consistently stated to us through the northern Hebrides, but without any satisfactory reasons being given for it. The general appearance of the crops tilled with the *caschrom* was greatly in favour of that instrument, on every species of soil.

† We have had occasion to recommend it in one of the wine districts of Hungary, where the ground is very rocky and hard ; and the instrument appeared to give much satisfaction to the person who first used it in his vineyard.


44 : an increase rarely known in the most fertile and best cultivated tracts of the British Empire.

Dr Walker * mentions a case in the farm of Bracadale in Skye, of an increase of barley of 64 fold ; and several such instances were related in the course of our tour this season. But the highest that was well authenticated amounted only to 48 fold ; and the average was from 15 to 25 fold, even in the *very best soils*. Those of potatoes were in some cases incredible. On the farm of Griminish in Benbecula, a man dug up, after the cuttings which filled one peck, no less than 78 pecks of potatoes. It was confessed, however, that a great quantity of sand or dust stuck to these potatoes, and that the clear returns for the peck of seed were only about 72 pecks of potatoes. At this rate the value of an acre of such potatoes in 1808, would amount to the sum of L.53. 5s. Sterling, of which the expence is only L.5. 7s. leaving a clear profit of L.47. 18s.

Upon the whole, we may conclude that this instrument cannot be used with advantage, but upon small farms, rocky or boggy lands, where the plough cannot go with advantage. It cannot be recommended for level land in any case, excepting for the first furrow in reclaiming it from a waste condition. Cottars and very small tenants may use it, however, very profitably, both in providing food for their families, and in bringing into a permanent state of improvement, for their masters, lands which otherwise would remain always unproductive and useless.

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* Vide Vol. 1. p. 127. Econ. Hist. of Hebrides.

It will perhaps have occurred to the reader, that the most important application of the caschrom has been omitted, namely, that of cutting surface drains in moist fields; an operation peculiarly necessary on the meadows of the greater part of the Hebrides. It is, indeed, rarely used in that employment; but the reason is not that it is unsuitable to it, but that no draining is practised. In forming surface drains, the caschrom, of an improved construction of coulter, would be a most valuable instrument. We have used it in that way, and cut drains of 12 inches depth, and 15 inches breadth at top and six at bottom, out of a stiff till soil, with the greatest ease, and infinitely more expedition than could have been done by any other tool with which we are acquainted. The common breast spade used for paring land, and also for the purpose now alluded to, is not to be compared to this improved caschrom, either in efficacy of operation, or in comfort and ease to the workman. The coulter should be six inches broad, and turned a little at the edges, thus, ; and the shaft at least six feet long, and very stout. An active workman will cut 800 yards of surface drain in a day with it of the dimensions above stated.

RISTLE.

2. *Ristle,—or Sickle Plough.*

This instrument is used for a similar purpose with the English scarificator, *i. e.* for cutting the strong sward of old land, or the tough roots of plants, which would otherwise greatly impede the passage of the plough.

plough. The English implement is furnished with five or six sickles, or coulter, which cut parallel to each other by the force of the same team; the ristle has only one. It is fixed in a small plough with one handle, and drawn generally by one horse. Two men are employed. One directs the ristle, which cuts to the depth of four or five inches, and the other leads the horse. Immediately following the ristle we found the Hebridian plough generally drawn by four horses, and these led by one or two men, and a second or perhaps a third man holding the plough. Thus five men and five horses are frequently employed where one man and two horses, with proper management, would perform the same quantity of work.

Where the ristle is necessary, as it indeed sometimes is, in strong land which for a number of years has been over-run with weeds, and with repent plants, the common scarificator ought to be preferred, cutting at least with two sickles, and held and driven by one man with one horse.

CLOW-MAÏTE.

3. *Clow-Maïte, or Wooden Tongs.*

This instrument is used for plucking thistles and other stubborn plants or weeds out of corn land, after the crop has sprung up to some height above the ground. The handle is 30 inches, and the jaw 10 inches long; when the handle is extended, the distance between the operator's two hands is from 20 inches to two feet. He uses the tool as powerful pinchers, and
with

with very great effect, especially on land annoyed by the different species of thistles. It is not in general use, being confined principally to the isle of Lismore, and to a few of the neighbouring ones, which chiefly consist of lime-stone soil, and are peculiarly infested with weeds which cannot conveniently be pulled by the hand. It deserves more attention than it has yet met with.

Of the Hebridian plough, it is unnecessary to give any description. It is daily falling into disuse, and very deservedly, and will soon yield altogether to the modern improved plough of the lowlands of Scotland. Veitche's plough appears to be the favourite at present in Islay, Gigha, and Collonsay; and consequently, to all appearance, the most advisable for general introduction into those regions. Small's improved plough has long been in pretty general use. We were happy to learn that a good manufactory of ploughs, carts, rollers, harrows, &c. for the west Highlands and isles, has lately been established at Campbeltown in Kintyre, from which these districts can be supplied with punctuality and cheapness. The plough manufactories in Leith, by Morton, Bisset, and several others, are well known over the Hebrides, and very much esteemed.

Carts are scarcely known in the smaller islands, excepting Gigha, Collonsay, and Ulva, but they will of course rapidly increase in proportion as these isles shall be furnished with carriage roads.

4. *Harrows*.—No species of agricultural implements are so backward in the Hebrides as this, though one of the

the most important of them all. Where the land receives, in nine cases out of ten, but one furrow, and that a miserably botched furrow too, good harrowing is absolutely necessary to the pulverization of the soil. A light harrow, ill contrived, with short wooden teeth, tied to the tail of the poor horse, is, however, in many of the isles, all the means used for breaking the clods, cutting the roots of weeds, and for performing the other operations of harrowing. The large improved break harrow, with iron teeth, and of the best construction, we found in Islay, Gigha, and Collonsay. On the last mentioned island some fields had been this summer subdued by this instrument, which, to an indolent farmer, would have appeared imprudent and absurd to attempt. The improvement in question could not have been thought of by the help of the common harrow alone; and the active landlord proposes to carry on the same operations to an indefinite length. Shawfield has harrows made altogether of iron. They cost L. 4, and the common wooden harrows with iron teeth cost L. 2. 15s. the difference being only L. 1. 5s. His adopting them seems to promise that they shall soon come into general use.

5. *Raakan, or Clod Breaker.*—This seems to be the same now as it was for ages back; for nothing can be conceived more simple or unimproved than it is at this day. The handle is four or five feet long; the head, into which six or seven wooden teeth are inserted, each three or four inches long, and 3-4ths in diameter, is rather thicker than the handle, and sharpened at both extremities for the purpose of breaking such stubborn

born clods as will not yield to the feeble wooden teeth. These teeth continually break or loosen from the head, so that the operator is frequently interrupted and impeded in his tedious work.

IARUNN-MOINE.

6. *Iarunn-Moine,—Peat Spade.*

This instrument is sufficiently good for the purpose which it is meant to serve. The head consists partly of wood and partly of iron. The last is formed so, that with it the labourer will cut the peat of the size intended, at one push, out of the peat-moss, while another labourer throws the peat so cut, either with his hand or with a fork, on a dry spot of ground, as nigh the peat-pit as possible. Two men can cut and cast in a day peats sufficient for the consumption of their families a whole year.

On many of the isles no regular plan is followed in the cutting of peats; and accordingly the fuel is wasted, and the land is left damaged by the water, which a judicious mode of cutting the mosses would convey to the adjoining rivers, lakes, or sea: Proprietors and factors have hitherto paid little attention to this very important part of agriculture, as it may justly be termed, and have themselves to blame for the calamity now imminent over their estates, viz. extreme scarcity of fuel. Every peat-pit ought to serve at the same time two purposes, carrying off superfluous peat earth for fuel, and preparing the space occupied by such
peat

peat earth for yielding crops of potatoes, grass, and corn. Such pits should, therefore, always conduce to draining the soil, pulverizing the substratum, and levelling the surface of the ground.

Thrashing mills have lately been introduced in Islay, Collonsay, Gigha, Skye, &c. and will soon become general, in consequence of the vast saving of labour and of the economy which they afford. A small kind lately constructed under the auspices of the Highland Society of Edinburgh, and which cost only L.22, ought to be introduced on all the larger isles. We found a very good thrashing mill in Collonsay, which, however, is too expensive for universal use. It thrashed six bolls of oats in two hours with three horses. In Hungary we have seen the same quantity of grain occupy 4 men and 10 horses for 16 hours; and the work was not nearly so well performed as in Collonsay. It would be a great improvement to make them move by wind or by water, where the situation admits of it. Wind mills are no where to be seen, though the use of them is recommended by the plainest dictates of necessity and common sense.

In Islay we found a flour mill (the only one in the Hebrides,) which cost the proprietor L.1800 Sterling, and which will greatly help the introduction of wheat crops into that island.

There are very few lint mills in this district.—Two occurred in Islay, and one is begun to be built in Skye. They must gradually be introduced in greater numbers for the accommodation of a country peculiarly adapted to the cultivation of flax.

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We may conclude this section by stating, that any implements worth mentioning, which we met with in the Hebrides, excepting those already noticed, are imported from the east of Scotland, or are imitations of such as are in common use there; nor is it likely that this region shall soon lead the van in any agricultural improvements, or in the invention and adoption of agricultural implements.

CHAP.

CHAPTER VI.

INCLOSING.

THE various acts of the Scots Parliament relative to the division of common lands, and the appropriation of them by the conterminous proprietors, according to their valued rents, and other circumstances respectively, did not contain any obligation to inclose such lands, as was the case in England. The only species of inclosure, obligatory by law upon a Scotch landlord, is the march dyke, or fence, which separates one estate from another. The respective proprietors must pay each one half of the expence of such fence, which must be sufficient and straight.

Although inclosing is not binding upon the Hebridian proprietor, yet he will find it for his interest to pay most particular attention to that *first of improvements*. The isles are deplorably naked and open. None of them, excepting five or six of the more southerly, and a few farms in Skye, are furnished with any thing

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which

which merits the name of inclosure, and accordingly their agricultural state is miserably bad. In Arran, Islay, Jura, Mull, Skye, and the Long Island, there are about 800,000 acres of land totally destitute of fences of any kind, but which, by being properly inclosed, might, instead of their present average rent of twopence per acre, yield three shillings, or a clear gain of L.113,333. 6s. 8d. Sterling per annum.

The inconveniences endured by the Hebrides from the want of inclosures are so great, that the most spirited proprietors grant very high premiums to such of their tenants as build proper fences on their lands. Shawfield grants full melioration to every farmer on his Islay estate who builds a stone dyke or inclosure, and encourages by all the means in his power the complete subdivision and inclosing of that noble island. Without this improvement, indeed, nothing else need be attempted : neither corn nor grass can be secure from depredations, nor can green crops or any skilful and judicious rotation prosper.

The Galloway dyke, a species of inclosure commenced in 1720 in that southern district of Scotland, and now well known and much esteemed over this kingdom, is the most advisable for the Western Isles. It is from 5 feet to 5 feet 10 inches high, nearly 3 feet broad at the bottom, and gradually diminishing in breadth as it rises from the ground, till within 18 inches of the top. There it is usually 16 inches broad; and receives a projecting cope of flat stones, above which a number of loose stones are piled up, sloping like the ridge of a house, affording day-light in the interstices of the stones, and thus terrifying sheep and cattle from any attempt

attempt to leap over it. It ought to be built very firm and strong, with a sufficient number of band or binding stones, and very few stones of less than a dozen pounds weight ought ever to be used. The cope stones should overhang the dyke 6 or 7 inches on each side. No stone liable to be damaged by frost or rain ought to be admitted. The snap or summit, which is erected above the coping, must be most particularly well built. Every stone must have a firm steady bedding, neither liable to be driven down by the strong winds and rains of these regions, nor by the cattle when they rub their heads or necks against the dyke. To this last mentioned danger, however, the Galloway snap dyke is much less liable than any other sort of fence; for cattle, horses, sheep, and even dogs, are generally frightened by the serrated appearance of the snap and coping, and rarely venture to approach them. A dyke of this kind costs, with good management, from nine to ten shillings the fall of six yards. A square mile English measure, of 1760 yards, will require 7040 yards of dyke in length, to inclose it in a quadrangular form of equal sides. But if the dyke is four feet and a half high, or a yard and a half, the dimensions of the inclosure will be 10560 square yards. These 10560 yards, at twentypence per yard, will cost L.880 Sterling; which is, at an average, perhaps a fair calculation for inclosing an English mile, or 500 Scots acres in one square field, with a Galloway dyke four feet and a half high. But supposing the same mile to be subdivided into inclosures of fifty acres each, or into rectangular parallelograms of 1760 yards length, and 352 yards breadth, and to be inclosed with the same kind of dyke, at the same price, the expence

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of

of each inclosure of fifty acres will come to L.528 Sterling, and of the whole mile, in similar inclosures, to L.5280 Sterling. Let us carry the subdivision so low as into parks of five acres each, and the total expences will amount to the large sum of L.44,020. 16s. 8d. Sterling, or nearly *fifty times* the expence of fencing the square mile with one dyke into one inclosure of four equal sides. Let us on the other hand suppose Lord Macdonald, or any other great Hebridian proprietor, to order an inclosure upon his estate of 16 square miles in one quadrangle, for a forest or plantation of trees. The expence will be as follows: 1760 yards \times 4 = 7040 yards in length, each side. 7040 yards \times 4 = 28160 yards total length of park-wall. 28160 + 14080 or one half more = 42240 total number of yards to be built; the wall being 4 feet high; and 42,240 yards at 20 pence per yard, amount to L.3520 Sterling.

His Lordship will thus have an inclosure of 8000 Scots acres finished for L.3,520, whereas the inclosure of one mile or 500 acres cost him L.880. In other words he has in one large inclosure for L.3,520, the same accommodation for planting trees, &c. that in 16 different inclosures of one mile each would have cost him L.14,080, and thus saves L.10,560, or three times the sum which his whole inclosure of 16 miles costs him.

It is unnecessary to follow out such calculations, or to state in detail the prodigious advantages which would result from making extensive inclosures in the Hebrides, especially on the waste lands of great estates. When a proprietor incloses a small park or two, and
compares

compares the returns with the expence of inclosing, he sometimes feels himself disappointed in his expectations, and sees no proportion between the immediate return from the rise of rent, and the great expence incurred in the meantime by inclosing a few acres, which were perhaps formerly pretty productive. But, granting that his notions here are not ill founded, the fact proves no more than this, viz. that inclosures on a very small scale should be carried on by the tenant in consequence of suitable encouragement from the landlord, who on his part ought to carry on that system on a grand scale, or at least on one to which the resources of the tenant are wholly inadequate. It is precisely the same as in other branches of commerce. The great merchant, by writing one order judiciously, may gain L.10,000 in one day, like his Lordship who may do the same in fact, by ordering a large inclosure to be built and planted with trees :—The shop-keeper retails the commodities so ordered for 20 or 30 years successively, and should be satisfied with clearing, at the end of his career, what the merchant, in consequence of his superior advantages, may earn in a day. Did the merchant stoop to retail the articles in detail, and grumble because his profits were small and slow; or did he altogether abandon trade, because the profits were not immense and instantaneous; he would act very preposterously; and the shop-keeper would tell him with a sneer, “ That he forgot his trade, and like a fool expected the fruits of 10,000 from the field of 10.”

The necessity of inclosing, and the utter impracticability of carrying on any agricultural improvements without that preliminary step, is the only point connect-

ed with the rural economy of this country, which we have never heard disputed. Without inclosures no proper system of tillage, no sown grasses, no green winter crops, nor sufficiency of food for sheep or cattle can possibly be provided. On many of the isles, too, inclosures skilfully conducted would answer other valuable purposes besides the mere subdivision and protection of the fields. They might, for instance, help to shelter cattle from the fury of the rains and storms, to which a district destitute of wood is peculiarly exposed. They would afford shelter for shrubs and trees, which might gradually be reared in belts of planting or hedge-rows, as they are in some parts of the counties of Derby and of Dorset, exposed to cold or the sea air; and they might easily be so conducted as to help the great and important operation of draining the land.

Proprietors should *first* provide for securing the effectual separation of the hill pasture from the arable and meadow grounds belonging to the different farms upon their estates. This they might do by stenting or apportioning a certain quantity of the *head dyke*, (as that separation is commonly called,) to each tenant in proportion to the souming of cattle, and to the number of seed bolls affixed to the lands which he occupies. It is not, however, sufficient that the landlord should order this arrangement. He must employ his factor in superintending the work, and in enforcing his order. He must perhaps hire a regularly bred dyker or two, for assisting the tenants, who will be bound to furnish the stones, and to perform the various works of trenching, of leveling the bed of the foundation, &c. and he must perhaps furnish meal and other aid to some of the tenants

nants during the course of the work. All these expences will be amply recompenced by the advantages which must speedily follow the finishing of the inclosure. This head-dyke, a march dyke, and the fences of some spots in sheltered situations, in the mountainous tracts, for the purposes of plantations, are all that the proprietor ought to have an immediate hand in building. The infield inclosures for the individual tenant's advantage should be left to themselves to finish; with the reservation, however, to the landlord that his factor shall be consulted in the building of every inclosure, for which full melioration is to be paid to the tenant at the expiry of his lease*. It will be proper also to consult the proprietor as to the size and position of these inclosures. They ought rarely to exceed 10 acres of arable ground, or to be under four acres, but for grazing farms of considerable extent, they may consist of from 12 to 30 or even 40 acres. These will prove useful as wintering parks for horses or for yeild cattle or sheep.

One thing particularly to be attended to, is the quality of the stones and the nature of the ground which serves as a foundation for the inclosure intended. No species of freestone or sandstone will resist the climate of the Hebrides. Granite, whin, or basalt, very common

* By full melioration we mean the value which an impartial jury, or sworn appraisers, will fix upon the work; regard being paid to every local circumstance connected with it.

men in the southern isles, and the harder schistus and ardesia, ought always to be preferred, *cæteris paribus*, where they can easily be procured.

An inclosure of whin and granitell in Gigha is one of the best we have seen, and one of freestone in the island of Raasay, very well built by the present proprietor Mr Macleod, but now crumbling into sand, equally confirm the propriety of the caution given.

With regard to the *foundation*, we have found that, contrary to general expectation, the inclosures built upon moss or moist ground, hold out very well, while those which were founded upon dry land frequently give way. The reason, however, was obvious to any accurate inquirer. The moist or mossy ground is generally level, and the pressure and weight of the materials are consequently equable and even. On dry land, not unfrequently too of a loose sandy texture, the dyke is often built upon a slope, and constructed purposely for availing its proprietor of the advantage derivable from the unevenness of the surface, both for carrying the stones and for saving the trouble and expence of scaffolding.

No inclosure will, however, be able to stand the furious storms and rains of the Hebrides, unless the stones are well poised on an even foundation, as well as consist themselves of the firmest mineralogical texture.

Gates are almost unknown, excepting such as are common in the continental Highlands, and, on account of their awkwardness, merit no attention in a report of this kind; the most eligible for the Hebrides would be common five bar gates made of larch or of birch,
and

and supported by two stone pillars. The gates must be so contrived that they shall close of themselves; for no Hebridian ever takes the trouble of shutting a gate after he has passed through it. It must also be very easy to open, otherwise the improvident and impatient native will not hesitate to break it; nor will he dismount from his horse without much reluctance, although he may risk his own and his horses bones by his laziness.

The man who builds inclosures or constructs gates in the Hebrides must always bear in mind the nature, not only of the climate and soil, and other circumstances of a similar description, but also of the people and the animals which they possess. These are more difficult to manage than those of any other portion of Scotland *. The people, one would be tempted to imagine on a superficial glance, take pleasure in mischief, and find a peculiar delight in destroying every thing which conduces to human comfort. They throw down stones from the battlements of bridges,—they fill up wells or drains,—they deface mile-stones,—break the windows of churches and of other public buildings,—they leap over hedges, dykes, and ditches,—cut down the banks of rivers and alter their course for inundating

* This an Englishman, who has seen only the *Lowlands of Scotland*, would think impossible; for the charge here brought against the Hebridians applies in a great measure to all Scotsmen from the Tweed to Shetland. We recommend, on this subject, a perusal of Miss HAMILTON's *Cottagers of Glenburnie*.

ing the adjacent fields ; and all this with the utmost *gaieté de coeur*, and without the slightest notion of its being taken ill, or the idea that any malicious construction can be put upon their amusement. They betray, in one word, with all the improvidence and stupidity of savages, (very inconsistent with their qualities in other respects,) the malignant activity of men, who follow no regular occupation, and can neither be useful themselves, nor endure the benefits conferred by useful men on their country.

Nor is this strange tendency to a hurtful activity confined to what we call (perhaps Hibernically) the *rational* animals of this country. The horses, cows, and sheep are universally of a similar disposition. The same inclosure that suffices for protecting the rich meadows of Suffolk and Essex would be no more heeded by an Hebridian beast, not even by the smallest cow, than if it consisted of the mist of the mountain. Any fence over which they can raise their heads, (excepting the snap-dyke,) they will attempt to leap, and they almost always succeed. When the first assailant fails, either by maiming himself or by falling into the ditch, the rest usually dispatch him, and then rush in pell-mell through the breach which he had begun to batter.

The inclosure must, therefore, be such, that none of the three species of animals above named can even once venture to think of leaping over it. Stones must here and there too be left jutting out a few inches from the sides of the dyke, for enabling the people to pass over it without difficulty. The *sang froid* with which an Hebridian pulls down a dyke for a passage to himself

self and his cattle, (and without dreaming of rebuilding the slap,) is to a stranger most ludicrously provoking. The scene is sometimes acted before a gentleman's door, and he himself an indignant witness. The Hebridian is surprised at his rage, and tells him, "that he meant no harm by taking the nearest road home with his horse." He perhaps adds, in the same strain, "and as for the grass, you need not mind it, Sir, it will grow again."

CHAP.

CHAPTER VII.

ARABLE LAND.



SECTION I.—TILLAGE.

THE Hebrides having been for ages chiefly devoted to grazing, the cultivation of crops requiring regular tillage was not a primary object. Agricultural implements were accordingly simple and imperfect, and the system of ploughing or tilling the ground made no progress for several centuries. Even to this day, the idea continues to prevail in some parts of these regions, that it is unwise to turn the soil at all, because the moisture of the climate, the poorness of the land, and the consequent insecurity and lateness of corn crops, render every mode of management inadvisable, excepting that followed by their ancestors, namely, corn-cropping the rich infields and grazing the natural old pasture with the indigenous live stock of the country.

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It must indeed be confessed, that in several districts of the Hebrides, especially in the rugged islands of Arran and Mull, in Jura, part of Skye, Harris and Lewis, and in the terrific island of Rum, the most valuable improvements of which they admit cannot be expected to proceed from tillage. Nature opposes impregnable bars to the passage of the plough over their surface. An enlightened agriculturist will perhaps say to the natives, "Inclose what you can, and plant hardy trees in the most sheltered situations, and especially in spots not exposed to the Atlantic and western storms; select the best and hardiest breeds of sheep and cattle; top-dress the practicable declivities of your hills with sea-sleech, shell-sand, or any other manure you can procure at a reasonable price; preserve your lowest lying grounds and meadows for winter use,—and do all you can to get through the year with the few potatoes you may raise on your mossy grounds, and the fish which providence scatters profusely along your coasts and lakes; and think not of forcing nature by cultivating white crops at a great expence, which can seldom arrive at maturity, and of which, even should they arrive at maturity, one storm may deprive you, and which, at all events, never remunerate you for the trouble and expence of their cultivation," &c.

Conversing with Mr Macneill of Collonsay on this subject, and discussing the propriety of limiting, by stipulated restrictions in their leases, the quantity of ground which the tenants should be allowed to till, we were happy to find that sagacious and experienced gentleman, who is equally engaged in the grazing and agricultural systems to a great amount, agree in opinion with

with Shawfield's most skilful tenants, and all those whom we had met with in the best managed isles.

There is a fallacy (said Mr Macneill) in the common and superficial opinion, that as the Hebrides are a pasture country, it is better for the people to rear cattle exclusively, and to import all the grain which they require from other countries, than to attempt, against soil and climate, to raise grain enough for the consumption of their own population. By proper management, added this acute observer, we can be not only amply supplied with corn at home, and rendered independent of foreign markets, but the very cultivation, which this management involves, would at the same time enable us to rear, feed, and sell, a much greater number of sheep and cattle, and these too of far better sorts than we do at present. A superior mode of tillage would ensure us better and earlier crops, consequently a less precarious harvest: The introduction of green crops, also implying a proper division of our labour through the different seasons of the year, instead of harassing us as at present during the latter end of spring, when our horses and cattle are famished with want, would keep our cattle strong and healthy, and greatly add to their numbers; and what is a most important consideration, we should be saved the immense sum for our poor country of *L.30,000 per annum* which the Hebrides pay to Ireland and Scotland for imported oatmeal."

The gentleman who spoke thus has proved the justness of his observations by his own conduct. He has introduced a regular system of tillage with one man driving two horses, and holding the plough as in Lothian
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thian or Norfolk; a judicious rotation of crops, and the most encouraging practice (as we shall afterwards see) of reclaiming waste lands. He admitted, however, at the same time, that, in many of the level and sandy islands, the plough is too much used, and that fields which under grass would be very valuable, are not only less profitably occupied by white crops, but also occasion great damage and loss to the lands in their vicinity. This is particularly the case in islands and districts liable to sand drift. These ought on no account to be opened up for corn crops, provided they already yield tolerable grass crops, and have got a solid and steady surface. The temptation to crop them with barley, oats, and rye, is indeed frequently powerful, because they are often found near the sea-shore, and near the manure which sea-weeds afford, but the crops which they yield are purchased at too dear a price. The crops themselves are insecure, and the wintry storms leave the stubble land a sandy waste, without grass or shelter, and flowerless, bleached, and bleak as the deserts of Arabia.

Tillage is in its infancy over the Hebrides, in all the isles northward of Mull, excepting half a dozen farms in Skye, a part of M'Leod of Raasay's estate, two farms in Uist, and a little lately done in Lewis near Stornaway, and by Mr Campbell of Ensay on a small island between North Uist and Harris. These improvements have been carried on within the last 15 years.

It would be rather ludicrous than useful to describe the tillage generally practised in the Hebrides; and accordingly we shall not dwell upon it, or insult the common sense of the natives, by seriously requesting them

to abandon the many barbarous customs which have so long disgraced their country. A man walking backward with his face towards four horses abreast, brandishing his cudgel in their noses and eyes, to make them advance to their enemy, followed by a ristle plough employing a horse and two men, the three commonly altogether superfluous, still followed by four horses dragging clumsy harrows fixed by hair ropes to their tails, and almost bursting their spinal marrow at every tug and writhing of their tortured carcasses; all this cavalcade, on ground uninclosed, undrained, and yielding at an average three returns for the seed sown, and sometimes lost altogether by the depredations of cattle, or by accidents in a late harvest, is a barbarous spectacle which must gradually vanish. It will soon give way, as it has already done in Islay, Gigha, Collonsay, and part of Skye, to the improved system of tillage which the late periodical publications and the reports printed by the Board of Agriculture have promulgated and recommended over the whole extent of the united kingdom. Meanwhile, we must point out some of the defects which appear to us to be the most pernicious that exist at present in Hebridian tillage.

1. *Ploughing*.—All the ploughing of these isles * is carried on between the beginning of March and the middle

* It must be always understood, when we mention the abuses generally prevalent over the Hebrides, that we mean to except the isles of Islay, Bute, Gigha, and Collonsay, where the improved system of agriculture is now prosecuted with astonishing spirit and success.

middle of May. Neither following nor alternations of green crops are practised. Little attention is paid to the depth of the furrow, or to its straightness; or to any thing else, in one word, than merely turning over the clod in the easiest way possible for the ploughman. No autumn or winter ploughing, although the soil and climate very frequently recommend both, is ever thought of. Potatoes are sown between the oat and barley season, *i. e.* from the 10th of April till the beginning of May, and are accordingly very often too late for this mild climate, which would admit of their being planted in March, and of the oats being sown in February, and the barley in April. No second furrow, far less third furrow, is given even to the stiffest or the coldest soils; and the necessary pulverization is therefore left to the ill-contrived and trifling wooden harrows, with blunt wooden teeth, already mentioned. The consequences are apparent as soon as the crop begins to shew itself. All the seed is lodged in the cavities between the two furrows, none remains on the summits or sides, and thus a species of drill-sowing, with all the disadvantages of lateness, and none of those of cleanness or of depth and superior pulverization of soil, ensue. This redounds to the great gain of birds and of grub-worms.

In no country is the propriety, and indeed the necessity, of straightened and narrow ridges so indisputable as here. The soil is moist, and requires a fair exposure to the sun, as well as a ready and easy channel for the surface water to flow off. Crooked and broad ridges are against both. Let the ridges rarely exceed 12 feet in breadth, and be, as often as circumstances permit, drawn from south to north, in order that the sun may

act equably upon every clod of which they consist. Let every farmer employ a part of his horses, while they are strong and vigorous, in the months of October and November, in ploughing such of his lands as he intends for green crops, or for oats the succeeding spring, and he will find an ample reward for his industry in the superior cleanness and fertility of his fields. Let him gain three weeks at least upon his present quarterly labours, or, if possible, one month; his harvest will be infinitely more secure, and much more valuable than it usually is at present. Let him till an inch or an inch and a half deeper than is his common practice, and make abundance of surface drains either with the caschrom or the drain-plough as he finds most convenient. These will prevent his lands being overflowed or poisoned with humidity, and his best soils being carried off by heavy rains, which would otherwise flow rapidly along the surface of the whole, instead of gradually running off and completely subsiding through the drains in question. Above all, let the Hebridian's tillage be a matter of previous calculation of probable profit and loss before he embarks in it. No crop upon three-fourths of an acre can afford him the maintenance of four men and five horses for eight hours miserable ploughing in a day; nor can three returns for his seed ever enable him to till the ground with profit. It were better for him to keep it in grass, however bad, dismiss his servants and horses, and trust to the sale of the few beasts which survive the winter for paying his rents, than thus to have an expensive establishment of idlers (like a nobleman) who are mere encumberers of the ground, and

and like Pharaoh's lean kine devour and destroy animals better than themselves.

2. *Harrowing*.—The common practice of harrowing in the Hebrides is, as we have hinted, so abominably inhuman, that it literally harrows up the soul of the stranger who sees it; and nothing is so unaccountable as the apathy with which a nation, far from cruel or unfeeling in other respects, could for ages have tormented the most generous and useful of domesticated animals, without being ashamed of a custom so savage and detestable. We have seen, in 1808, young handsome colts, two or three years old, chased by dogs, boys, and men, into quagmires; bound down after their strength had been completely exhausted, their fine long tails firmly fastened by strong hair ropes, or sometimes by rough heather ropes to the harrow, and then lashed unmercifully through peat-moss and newly ploughed land, until they have actually fallen broken-hearted to the ground. Indignant at this shocking treatment of the unfortunate young creatures, we endeavoured to explain to their tormentors the simplicity and cheapness of harrow-harness, and pointed out the most cheap and expeditious mode of getting a sort for temporary use, which would not exceed 4s. 6d. each. The persons who treated their animals so brutally laughed at our squeamish tender-heartedness, declared that *this* was the only method of taming young colts, and went on as usual. The gentlemen farmers, and all people of influence, it is to be hoped, will put a prompt end to so disgusting a practice, and severely punish every infringement

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fringement of such regulations as they may make for that salutary purpose.

The Hebridian never harrows his land after the first harrowing, which immediately succeeds his throwing the seed into the ground. Yet harrowing with iron teeth would destroy not only many weeds which annoy his land, but also a large proportion of the grub-worms (toranach) and other vermin, which frequently annihilate the hopes of the year.

3. *Rolling*.—This operation is very little known in the Western Isles. Rollers have not made their appearance in many of them, and it is likely they shall not for several years to come, however useful the application of them might prove. Some of these islands suffer severely from drought during the months of June and July. The roller, by consolidating the surface, would help to retain the original moisture, and to prevent the seed from being totally parched up. It would also help to keep steady a sandy surface, to level inequalities which in autumn prove troublesome to the scythe; and it would, like the harrow, be a formidable enemy to the grub-worm and snail, especially if used in the night-time. These destructive vermin carry on their operations either on the surface, or very little below it; and would be crushed by the weight of a heavy roller. The best kind for the Hebrides would be those which are made of wood, and can with stones be contrived of any weight that suits the soil and season of the year.

4. *Scarifying* is clumsily imitated by the ristle already mentioned; but is not practised with any further view than merely to facilitate the passage of the plough.

5. *Ridges*.—In peat-mosses or bogs, and on the first turning up of deep waste lands, the Hebridian practice of forming narrow ridges with a ditch on every side, and at each end of the field, is very judicious. This is almost universally the manner in which potatoe ridges are managed in Skye and the Long Island, and it may safely be recommended wherever the soil is deep and labour can be procured at a moderate rate.

The workman makes a straight furrow with his cash-crom, or with the plough (the last is very seldom used for waste-lands or peat-mosses for the first five years) from right to left. He continues it for a hundred yards or perhaps the length of the proposed field. At the distance of from four to six feet from this furrow he draws another in a parallel direction. His ditch is commonly two feet broad, and from one foot to two feet deep, according to the nature of the soil. Parallel to the former furrows, he draws a second and a third, &c.; leaving the two feet for the ditch as before. The whole field is thus ridged into very narrow rectangular parallelograms of perhaps some hundred yards in length, and from four to six feet in breadth, intersected by narrow deep ditches of from two to three feet and a half in breadth, and between 12 and 26 inches in depth. Those ditches are excellent drains; and the soil which they contained, being added to the ridges, and intimately mixed with the manure, as well as completely pul-

verised by being exposed dry to the air, and by being broken by the caschrom and the common spade, yields a capital mould for potatoes.

After a crop of potatoes, for which this species of tillage is observed to answer particularly well, the ridges remain as the persons who have gathered the crop chuse to leave them until the end of April. One coarse and careless ploughing, or perhaps merely a harrowing, is then given, and a crop of barley, without any grass seeds, and without any idea of cleaning the ground, is taken; after the barley is cut down, the ridges, of which the sides have now fallen into the ditches, and totally intercept the course of the water, remain in a state of absolute neglect, until oats are sown in March or April. Neither the barley nor the oats get any manure. A second crop of oats follows, and a third if the land is remarkably good, until it be left a complete *caput mortuum*, with scarcely the vigour of producing any grass, but the most ignoble weeds and thistles. Thus at the conclusion of a series, pretty skilfully and judiciously begun, the poor ridges are found in a dismal state. Distorted, crooked, and serrated, their sides are overgrown with rank weeds, and the ditches, which have received the best soil of the ridges, display a luxuriant growth of sprets* and rushes. During five or six years thereafter, the field must lie dormant, while nature works by her *vis medicatrix* to restore the exhausted and debilitated powers of vegetation to the soil. Nothing

* *Juncus Articulatus*. Linn.

thing worth mentioning is produced. At last a new crop of potatoes is prepared for, in the way already described, and the same practice of making and unmaking the ridges is followed. Now, the obvious and plain cure for the evil just complained of would be this: After the potatoe crop is got in, let the farmer plough the whole field along the furrows, which will be a very easy operation, seeing the act of taking up the potatoes has already loosened the soil. Such ploughing will, however, bury the potatoe shaws, or stems, and expose the land to the pulverizing frosts of winter. In March let him plough the field again, and harrow it carefully and repeatedly, so as completely to pulverize the clods left unbroken by the plough. He must take particular care that the ditches, which separate every 12 feet broad ridge, or 16 feet broad ridge, according to the moisture or dryness of the ground, shall be left clear at every ploughing. This he can easily do by making a double furrow, or a double cut with the caschrom at the bottom of such ditches, when the ploughing of the field is just finishing. At each end of all the furrows and ridges, let him have a large open drain, or a covered one, made up of the stones dug from the different ditches, for carrying off the waters of his whole field. Let him, early in April, give his ridges the last furrow, sow his barley seed, harrow it carefully; and 12 or 14 days thereafter sow his grass seeds, harrowing them in with a short-toothed harrow, and taking care to poach the ground as little as he can. If the season is dry and the soil so too, let him roll the ridges, and conclude all with cleaning the ditches and mother drains at the extremities of his field.

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The field subjected to this operation must not be depastured with horses and full grown cattle during autumn and winter, as is commonly the case after the barley crop is removed to the stack-yard; for the surface is miserably cut by their feet, and dug into pits, which retain moisture and destroy the grass plants; but if depastured at all, it must be with the lightest beasts on the farm. A luxuriant crop of hay, in regular and beautiful ridges, will, early in July, or perhaps in June, repay the attention thus bestowed. A second crop of hay will be ready in September, and excellent pasture will follow for the winter. The following spring, pretty early in February, the ditches must be cleaned, just as the soil shows any symptoms of returning vegetation; the ridges carefully preserved; thistles discovered and destroyed in their beds before they spring; and all possible means used to remove noxious weeds. The field may thus remain one or two years in pasture, according to circumstances, and then be broken up for oats. It will be in good heart, and admit of regular cultivation thenceforward in the rotation hereafter to be pointed out.

The ridges prepared for a potatoe crop serve, therefore, in the first instance, the important end of draining a soil which has been since the creation chilled with under-water, and they serve as a preliminary step to the formation of regular ridges of the most commodious size and the most useful form. They ought to have a gentle rise in the middle, so as merely to cast off the rain into the ditches; but not to be of a height, as we sometimes find them, which incommodes workmen and horses in their tillage.

6. *Putting in crops without ploughing.*—The only crops put into the ground without ploughing in the Hebrides, are barley in very sandy soils, and potatoes in lazy beds, or barley into potatoe land with a simple harrowing as above described. Potatoes are dibbled in, or placed by the hand, at regular distances of from six to eight inches along the furrow formed by the caschrom. The dibbled potatoe seeds are covered over by young persons with hand rakes or small mallets, with which they break the clods at the mouth of the dibble hole, and fill up the hole with pulverised earth. This yields in general pretty tolerable returns, and is the universal practice over the greatest part of the Long Island,—but it is a very tedious and laborious operation. Turning over the clod with the caschrom upon potatoe seeds laid upon the manure on the green sward is often practised, but we have not found it advisable. If the soil be cohesive and stiff, the clods remain too firm to admit of the tender potatoe fibres entering or pervading them; and if it be moist, the potatoe cuttings used for seed frequently perish from moisture, without any vegetation having commenced. In every case, by the seed being placed too deep in the ground, the crop is usually later than when the dibbling or common drilling system is adopted. This last circumstance of *lateness* appears to us to be conclusive against any mode of Hebridian tillage. If the storms of November or December assail any crop in these regions, the farmer may bid adieu to every hope which he had formed from it. All is then hopeless and lost. He can scarcely get the crop from the ground, and that,
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too, in such bad order that he cannot possibly preserve it for the winter.

7. *Drilling*.—Very little drilling is used in the Hebrides, excepting the islands in which other modern improvements have lately been carried on, and to which we have frequently occasion to allude. It is certain, however, that all green crops, commonly so called, should be drilled, such as turnips, potatoes, cabbages, beans, peas, &c. and that neither they themselves nor the ground can otherwise be done justice to.

The only rational objection urged by Hebridian farmers against the practice of drilling even barley and oats, for which their light friable soils are peculiarly well adapted, is, that drilled crops are later in ripening than broad cast ones, and consequently come under the denomination of practices which their boisterous climate absolutely forbids. On inquiring we found, however, a considerable contrariety of opinions on this head. Comparing the different crops in various situations and islands, we found this to be the most prevalent opinion, viz. Barley and oats yield fully as much grain per acre, with *two-thirds* of the seed when drilled, that they do when sown broad cast. The grain is fuller, cleaner, and consequently better, though not in any considerable degree. The land is also cleaner the succeeding year. In light soils, the drought is not so pernicious, because the drills are deeper than the common broad cast furrow. In moist lands, the drills are useful also, for obvious reasons. But all these advantages, which are allowed to be great, are counterbalanced by some disadvantages which attend the drill husbandry for
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white crops. Such crops are a fortnight later in ripening,—they are more apt to be shaken during the stormy months of August and September, in consequence of being more exposed to the free circulation of the wind through them, the very circumstance which proves so beneficial to the quality of the grain, and the vigour of the ear,—and, lastly, the straw is coarser; and they require more nicety in sowing them, and in the rest of their management, than the common broad-cast method.

As in many thousand optional parts of human conduct, the preference here, too, must certainly depend upon several minute circumstances, which admit of no other umpire than calculation established upon experience.

8. *Horse-hoeing*.—This very important and advantageous operation is also rarely used in the Western Islands. The implement and the use of it are so simple and obvious, that it is indeed astonishing to find so little notice taken of it by those Hebridians who visit the lowlands of Scotland, and who, by imitating it at home, might save themselves so much trouble and expence in human labour. The practice of Islay, Gigha, and Collonsay will, however, soon bring it into public estimation; and potatoes and other green crops must soon experience the advantage.

9. Hand-hoeing and weeding are conjoined; and constitute a considerable portion of female labour during the summer months. They are, however, almost entirely confined to the potatoe crops, and carried on clumsily and unskilfully.

SECT. II.—FALLOWING.

FALLOWING is entirely unknown. Perhaps it is not necessary, further than by means of a green crop, in one field out of a thousand in the Hebrides. The infield of each farm is generally of a light sharp soil, kept tolerably clean, and would answer better for a meliorating green crop than a summer fallow. It were quite unnecessary, therefore, to lose a crop, where there is neither strong clay land nor weeds to be overcome.

SECTION III.—COURSE OF CROPS.

THERE is no regular course or rotation of crops adopted over the Hebrides, excepting the isles which are so often mentioned as more advanced in every respect than the great mass of the district. The general plan is to sow barley manured, after which two crops of oats and one of rye is taken, and the ground lies ley for six or seven years, until it spontaneously recovers in some measure its strength after so barbarous a treatment. There are instances in the isles of Skye and Uist of fields which have been every year under white

white crops for half a century, and six or seven barley crops taken off in succession are no rarity. Where this course is followed, the description of management can neither be attended with pleasure or advantage. We shall therefore rather suggest what appears to us, both from reason and experience, as the most eligible course of cropping for the greater part of the Western Islands.

On sandy soils, where sea-weeds or other manure can be procured, 1. Barley with grass seeds ; 2. Hay ; 3. Pasture ; 4. Pasture ; 5. Oats ; 6. Turnips, potatoes or peas and beans horse-hoed and drilled with manure ; 7. Barley, and to recommence :

On strong soils, 1. Oats ; 2. Beans with manure ; 3. Hemp drilled, or cabbages ; 4. Turnips or potatoes with manure ; 5. Barley with grass seeds ; 6. 7. 8. Hay and pasture, and to recommence.

If the land, of a strong nature, be uncommonly rich and fertile, three or four white crops may be taken instead of the two which we have just mentioned, and the rotation may run thus : 1. Oats or barley ; 2. Potatoes with manure ; 3. Barley with grass seeds ; 4. Hay ; 5. Pasture ; 6. Oats ; 7. Turnips with manure ; 8. Barley, and to recommence :

On peat moss, 1. Potatoes with manure ; 2. Oats with grass seeds ; 3. Hay ; 5. Pasture for young stock ; 5. Pasture ; 6. Oats ; 7. Cabbages, turnips, or potatoes with manure, and to recommence : After the second rotation, peat moss land should have six or seven years in grass, in order to attain a proper firmness and solidity ; and the hay crops should be cut early, before the seeds begin to ripen, or the hay acquire a yellowish or brownish

brownish tinge. Great attention should be paid to keeping such land in good heart ; for it will otherwise be apt to revert to its former waste condition, and to produce heather and mosses of different kinds. It is more difficult to cure it after such relapse than to improve it from its original state of barrenness.

On fine loam or black mould, 1. Turnips or beans with manure ; 2. Flax ; 3. Cabbages or potatoes or peas ; 4. Barley with grass seeds ; 5. Hay and pasture ; 6. Oats ; 7. Turnips ; 8. Barley with seeds, and to recommence as on sandy soils, the rotations to be alternate.

We have not admitted wheat into our rotations, because, in the present state of the Hebrides, it is very problematical whether the cultivation of that grain be advisable. It is only in Islay that a fair experiment has been made, and some years must elapse, before we can determine whether the results of the experiment shall be such as to give good encouragement for prosecuting similar attempts in future *. We have also excluded rye out of our rotation ; for we are convinced that

* Summer or spring wheat, of late strongly recommended both on account of its value and of its adaptation to the climate, soil, and manners of the Hebrides, may be cultivated with success in the better and more improved islands, and probably will shortly be so ; but we are not warranted in hazarding any recommendation, or indeed any positive opinion upon that point. Green meliorating crops should first become general, and the most advantageous white ones will naturally follow of course.

that this species of crop, however much cultivated in the sandy districts of northern Europe, is a scourging, capricious, and upon the whole, unprofitable grain for the Hebrides. Should it, however, be admitted, it ought to be inserted in the rotation the same as oats, and never succeed, (as it at present usually does,) a white crop of any description whatsoever.

It is a great robber of soil and enemy of grass. Should the Board of Agriculture approve of these rotations, which we have just enumerated, and which we have found by experience to be the best adapted to the soil and climate, as well as to the wants of the Hebrides, it would be a most patriotic and beneficent act to use its influence with the Hebridian proprietors in gradually recommending to their tenants the adoption of them, or even gently to introduce them by stipulations in their leases or any other mode of agreement which they may deem most adviseable. The case is very different in the Hebrides from what we find it in the more cultivated parts of our country. In the latter, improvements advance rapidly by the more certainty of the profits which accompany them. But in the Western Isles, not only the prospect of contingent advantage, not only example and precept, but all possible *influence*, short of absolute or tyrannical force, ought to be employed in overcoming deeply rooted prejudices, and in removing habits and senseless notions which have prevailed for ages. On the great properties, especially in Skye, the Long Island, Lismore, and wheresoever a considerable extent of arable land is found within easy reach of good manure, we can see no difficulty in enforcing a proper rotation of crops; and we are perfect-

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ly convinced that the rotations above suggested would in eight years triple the produce and double the intrinsic value of the lands on which they should be adopted. Experience of the fact evinces that the *common people* will do little or nothing of themselves; for they are now, generally speaking, just as they were 20 or 30 years ago, especially the small tenants in the remote islands; and so are the lands of a great many farmers of some wealth on the kelp estates; all proceeding from inattention to a suitable rotation of crops. We have dwelt the longer upon this head because it is a subject of the last importance to the Hebrides, and because it cannot be too often or too urgently pressed upon the consideration of every friend of Britain, and every benefactor to this very interesting portion of our country.

Crops commonly cultivated.—The number of these is very limited in the Hebrides. Barley, oats, rye, and potatoes, with here and there a little flax or hemp, and now and then a few acres of turnips and of sown hay, constitute the whole of them. Cabbages, carrots, roota-baga, and all other pulse and green crops, are confined to gardens, and not likely to make speedy progress in a country so backward in preliminary improvements.

SECTION IV.—WHEAT.

THE only fields of wheat which we have met with in our tour through the Western Hebrides, were within a few miles of Islay House, belonging to Shawfield or his tenants *. They looked very well, and appeared to be managed the same way with wheat crops in the Lothians and in Lanarkshire. Wheat generally turns out particularly clean and sound after potatoes. We heard no complaints of smut or any other disease in this crop, nor is there any peculiarity worth mentioning in the management of the ground. It is of course sown on the strongest land, and either after a fallow or a green crop.

SECTION V.—RYE.

This species of grain, the main support of the tenantry and lower classes of people in the north of continen-

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* There were many in Bute ; but as that island and Arran are to be surveyed separately, we are not so particular in our account of them as we are of the islands commonly called the *Hebrides*, or the *Western Hebrides*.

tal Europe, from Siberia to Amsterdam, is pretty generally sown on the sandy districts of the Western Isles. It is a hardy grain, and not only very easy to thrash, but also productive in meal in an eminent degree. Its most powerful recommendation, however, here is, that it will grow on very poor and exhausted land, and give some few returns, where no other grain would give one. It is therefore used to deal the unhappy field the coup de grace of sterility. A half boll or three bushels sows an acre, and the acre returns two bolls or four seeds, very rarely six or seven, though it sometimes gives 10. It often fails altogether; and its place remains an unsightly scab on the skin of the farm for five or six years. Many acute and sensible farmers are of opinion that the cultivation of rye should entirely cease in the Western Isles, the soil and climate of which they alledge to be unfavourable to that grain.

SECTION VI.—BARLEY.

BARLEY,* or more particularly Bigg, or Bear,† forms one half of the Hebridian crops. The four row grain-
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* *Hordeum distichon*.—LINN.

† *Hordeum Vulgare*.—LINN.

ed is universally sown, excepting in Gigha, and on a few farms in Islay, where we met with the real barley with long two row grained ears.* The reason urged for preferring the inferior species to the better kind is, that it is fourteen days or three weeks earlier in ripening, and that it does not require such rich manure, or so fertile a soil as the genuine barley.

1. *Tillage*.—The common practice is to give the land one simple furrow, either with the caschrom or the plough, and immediately to throw in the seed broadcast at the rate of a boll and a half or 24 pecks per Scots acre, and then immediately to harrow in the seed without any grass seeds, and leave it to the care of providence. Instead of such management, the land ought to be ploughed at least twice, and if possible thrice before sowing, and after every ploughing it ought to receive a complete harrowing.

2. *Manure*.—The whole range of the Long Island, as well as Coll and Tyree, and some parts of Skye, depend upon the bounty of the ocean for the greater part of their manure. Sea weeds constitute a very valuable stimulant by the alkali which they contain, and accordingly yield an astonishing increase on the barley fields

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* Barley, being the general term, and vernacular in Scotland, we use the name to denote the species of grain here treated of, and which is universally used in England as the denomination of the whole genus.

to which they are applied. The ground intended for barley and potatoes is covered over three or four inches deep with these weeds in November, December, January, and February, and thus remains until it gets the seed furrow. By the end of April, the soil has absorbed the portion of alkali which escaped evaporation by the air and destruction by the rains, and shews on its surface but a few shrivelled tangles or harder parts of the weeds, which oppose no obstacle to the plough or spade. To any man who sees this process, it will appear demonstrable that three-fourths at least of the manure are lost to the land by mismanagement. Were the fields, intended to be manured, ploughed either previously to the sea-weeds being spread over them, so as to admit an instantaneous and intimate absorption of the alkali through the open surface, or were they ploughed immediately after the manure has been laid on, so as to incorporate the manure with the soil, the whole substance of this valuable stimulant would be secured. Nor is the winter scarcely ever so severe as to prevent ploughing; and the far greater portion of the arable land is by nature dry enough to admit of the use of horses, or might very easily be sufficiently drained for that purpose.

In Islay and the improved isles, lime is used as manure for barley, on all soils excepting such as are very sandy or sharp. One great advantage of lime is, that it destroys the most formidable enemy of barley in these regions, the grub-worm. Perhaps the very best manure for this grain in the Hebridian soil and climate, would be a compost of moss, dung, and sea-weeds, where lime cannot be easily procured; and where such can be used at a cheap rate, a compost of lime, moss, and

and sea-weeds. The proportions of each ingredient must vary according to the quality of the soil, and a number of circumstances ascertainable only by practice and experience.

3. *Drilling*.—Barley has occurred no where in drills excepting in Collonsay, where it promised extremely well. This method ought to be followed on very thin sharp soils, where the heat of summer, and the extreme drought in June and July, often parch up the ground, and affect the seed, which, by being sown broadcast, lies nearer the surface than it would do if properly drilled. It is not fully ascertained which plan is followed by the greatest increase; but we have found the fact uniformly and universally admitted, that drilled barley, like other drilled white crops, is *later* than those which are sown broad-cast. The saving in seed is stated at fully one-third, which certainly merits attention, and which, as soon as a constant custom of changing the seed shall be adopted, will prove of considerable importance to the farmer.

4. *Time*.—Barley is sown in the end of April and till that of May, and reaped in the latter end of August and in September, and sometimes in October. We found in Lewis and North Uist some fields of barley cut down on the 12th of August, which had been sown on the 29th of May, and had ripened completely in ten weeks from the day of sowing. It has happened that barley has ripened in Lewis within nine weeks, and we have known it to do so in the northern provinces of Norway and Sweden in eight weeks. The shortness of the

time necessary for the maturity of a crop, is a strong recommendation in a country of which the climate is so variable as that of the Hebrides ; and it is not wonderful therefore that this should be a favourite grain. Three weeks, however, are usually lost in spring, and these too of vast importance, especially with regard to the grub-worm. That pernicious reptile commences his depredations generally in June, and rarely attacks any field before the end of May. Were the barley sown early in April, the seed would have pushed such vigorous fibres before the grub worms begin their activity, that it is likely their attacks would be attended with less fatal consequences to the crops than we now find them. They cut the infant blade close by the putrifying seed grain, a few days or weeks after being sown ; and often devastate a whole farm.

5. *Sort.*—The barley generally spread over these islands, is the common Scotch *bear*, *bigg*, or *rammle-bear*, as it is called in the east and north of Scotland. No attention has hitherto been paid to changing the seed, or to procuring the best and wholesomest grain for that purpose. On the contrary, the Hebridian farmer usually sows the worst parts of his grain as seed, and selects such as appear damaged, or least useful for family purposes, or for the market. He forgets that he sacrifices his after crop to this paltry and short-sighted economy ; and as to changing his seed for that of a distant island or farm, he never once thinks of it. This is at least true of four-fifths of Hebridian farmers. But it is to be hoped that the example of Islay, and the other improv-
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ed islands, will be soon followed, and a regular change of seed as well as a selection of the best sorts of grain, for that purpose, will be gradually introduced. It is difficult to state the average quantity usually sown on an acre in this country. From half a boll, or eight pecks, to 18 pecks, have come within our observation on the same farm in different situations; nor indeed can we safely determine whether the quantity is commonly too great, or too little. Perhaps a boll and a quarter to the Scots acre is sufficient; and the return may, with tolerable management, be calculated at seven bolls. In general, however, the land is so injudiciously and barbarously scourged by a succession of white crops, that one half of this return is thought a good crop. We have seen within the last 10 years, on a farm in North Uist, barley give 44 returns pretty generally, upon the whole of a large farm of Lord Macdonald's estate. The quantity of seed sown was about two pecks, on very sandy land; the season was rainy till the middle of June, when it became extremely warm and sultry; and the returns were over head from 86 to 88 pecks per Scots acre, or five bolls and a half from one eighth of a boll of seed. The land, in which this seed was cast, did not seem previously to be worth five shillings per acre. Unfortunately no grass seeds were sown along with the barley; and the fine hay crop, which would probably have amounted the succeeding season to 200 or 300 stone weight, was lost by indolence, ignorance, or neglect.

The farmer ought to lay by for seed the very best of his grain, and to choose such samples as are round, plump, thin husked, glossy, yellow-coloured, and heavy. He ought also to steep his barley-seed, and indeed all
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the corn-seed which he sows, not only because the light and damaged grains, as well as weed seeds, usually float on the surface of the steeping-tub, and may thus be skimmed off and applied to some other purpose, but also because it is well known that steeped seed vegetates earlier and more vigorously than such as has been cast very dry into the ground. On sandy dry soils this practice should be universally adopted.

Harvesting.—Harvesting is an important part of the farmer's annual toils; and in no country is it of more consequence to be particularly attended to than in this. The climate is so precarious that no good day should be lost when the crops are nearly ripe. The sickle alone is used, to the total exclusion of the scythe, though the last mentioned instrument might frequently be employed with advantage. Where straw and fodder are so scarce and valuable as to constitute the most precious part of the harvest, it is strange that the scythe should be so little used; and the more so, when we consider how valuable time and labour are at this season to the Hebridian. The lightness of the crops, too, should be another inducement for preferring the scythe to the sickle in a multitude of cases.

As soon as the barley is cut down, some labourers, generally one to every five mowers, follow the reapers, and tie up the crop in sheaves, called in Gaelic *dorlach*, in bands or strings formed of a few plants of the longest kind of the barley itself, and place them upright on the stubble end upon the ground. They remain thus until the evening, when all the labourers join in uniting the different *dorlachs* (generally 30 or 35 pounds each in weight)

weight) into threaves ; or perhaps if rain or wind threaten, into narrow rectangular stacks about ten or twelve feet long, six feet high, and four feet broad each. The length depends upon circumstances, such as the dryness of particular spots of ground, the goodness or badness of the crop, &c. ; but the breadth is uniformly neither more nor less than double the length of the dorlachs or of the barley. The ear is in the heart of the stack, and the stubble end outward. This stack is called a *dash* ; and is well contrived for drying the barley, and exposing it to the air, without the grain being liable to suffer injury from rain. The top is formed like the roof of a house, and sometimes furnished with a coping of straw, or hay, to prevent rain from penetrating into the inside of the dash. After remaining thus *dashed* for 2 or 3 weeks, the barley is collected into some dry part of the field, and built into cylindrical stacks, terminating above in a cone, as is usually done with hay in other countries, and is left so until the whole crops are cut down. At the conclusion of harvest, the different kinds of corn are carried on sledges, or carts, or on horses backs to the stack or barn-yard : and this concluding operation, called *croghadh*, is always attended, like that of the vintage in southern Europe, with scenes of festivity and mirth.

Barley straw is not much esteemed for its nutritive properties, and accordingly serves chiefly for manure, after being used as litter to cows and horses, and as thatch for the tenants houses. One half of the barley straw of the Long Island and of Skye, is used in the last mentioned way, to the immense loss and inconvenience of the people. In Jutland and in Brandenburg,

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we have seen it cut into short pieces two or three inches long, mixed with chaff and a little corn, and given to cattle with a little water, who appeared to devour it greedily, and to thrive very well upon it. It is sometimes mixed with hay in the Hebrides; but cattle often pick out the hay and reject the straw, which nothing but extreme hunger will induce them to eat in its simple and unmixed state. Boiled barley grain is at once the most wholesome and most pleasant food for young stock, when reduced to a low pass, either by some accidental misfortune, or by the inclemency of the seasons, or scarcity of fodder. It is accordingly given in this state to young cattle, and to sickly or enfeebled milk cows, with great success; and, being more laxative than oats, is also found in many instances a preferable food for horses when long confined to the stable.

Nine-tenths of the population of the Long-Island, of Tyree, and of Coll, use scarcely any other than barley bread. They dress it in a way peculiar to themselves, and in our opinion well calculated for that excellent species of grain. The barley is kiln-dried in the ear, then thrashed and ground; the meal is mixed with water and a very little salt, and wrought into a dough of the consistency of stiff undried clay. It is then divided into balls of equal size, nearly that of a four-pounder cannon ball, and afterwards formed by the hand, or by a round stick, into circular cakes about 9 or 10 inches in diameter. These cakes are one-third of an inch, or sometimes half an inch, in thickness, and are placed edgewise leaning against a flat stone opposite to a good fire. The baker, always a female, takes care to turn and stir them frequently, until they are completely

pletely roasted, and nearly as hard as a common biscuit. Their surface has a thin skin or coating of meal, which gives them a cleanly appearance; and they are certainly a very nourishing and pleasant kind of bread. A man-servant gets two cakes weighing nearly one pound of meal, exclusive of water and salt, and a woman one cake to each meal. Sometimes the men's cakes are made of double-sized balls, 12 to the peck, but the general size is such as we have above stated, and they have 24 to the peck of meal. Over and above this quantity of barley, both men and women receive as many potatoes as they can eat, or perhaps commonly 3 lb. weight each man, and 2 lb. each woman, per meal.

The only thing against this mode of baking barley is, that the bread which a family requires must be baked once or twice every day; for the cakes, which are kept for two or more days, become very tough, and acquire a disagreeable taste. The consumption of fuel must therefore be very great, and nearly as troublesome in summer as in winter.

In Sweden, the peasants bake *once* only in the year. Their bread is a mixture of rye, and barley, and oats, or sometimes a mixture of rye and barley alone, formed into thin cakes like the Hebridian barley, fired pretty much in the same way, and suspended upon ropes hanging from the roofs of their dwelling-houses all the year round. On entering a Swedish peasant's house, his whole annual provision of bread is seen at once; and very good and pleasant we have found it, when accustomed to eat of it for some months. The use of stoves in their houses enables them to escape the inconveniences resulting from smoke, which embitter in many ways

ways the Hebridian's existence : but surely something might be contrived similar to the Swedish stove, which costs only 30 shillings, and is made of clay, that would enable the Highlander and the Hebridian to save two-thirds of the fuel which he now consumes, and to avail himself of the other advantages yielded by the stove. We shall afterwards have occasion to recur to this subject. Meanwhile, notwithstanding Dr Smith's advice * to the contrary, we cannot help recommending in the most earnest manner to Hebridian and Highland proprietors the cultivation of this grain, and the use of it as bread for their people. The peasants of the islands above mentioned, as well as the Swedish peasants of Warmeland, Jemteland, and the northern districts of that kingdom, from the Lake Wener to Fahlun and the frontiers of Lapland, are as strong bodied and clean skinned a race of men as any in the world, and vastly superior in point of appearance to the common classes in countries which principally subsist upon oats and rye. The Greek and Roman gladiators and wrestlers were fed with barley, as the most favourable food for giving the human frame its highest attainment of muscular strength ; and their writers recommend the use of this grain in the most eloquent language. Nothing however is necessary further to convince us of its excellence, than the quantity of powerful liquors that may be distilled or brewed from it. Its own intrinsic value, and the circumstance of its early ripening, and its being so friendly to grass seeds, and consequently to the production

* Vid. Agr. Rep. of Argyleshire, p. 89.

tion and improvement of the staple of this country, must make the extensive cultivation of it at all times a leading object of every enlightened Hebridian's attention.

Much barley is used or abused in the Hebrides in illicit distillation, but very little is brewed into ale or beer. The natives are fond of ardent spirits, and care not for any malt liquors. They might, however, be gradually weaned off from their obstinate prejudices in favour of whiskey, were a few breweries established among them. Shawfield, with his wonted activity and beneficence, built a brew-house, and established a complete brewing apparatus at Bridgend, near Bowmore, in Islay, some years ago. We found very good strong-ale and table-beer there this season 1808-9, and the brewery promises to prosper. It has already effected a laudable change in the taste of the whiskey-drinking classes on that island, many of whom now prefer good ale to bad whiskey, and have relinquished the detestable habits of drunkenness in which they were formerly too apt to indulge. There have been instances of 2000 bolls of barley being brewed into ale in Islay in one year. What a saving to the island, and what a prodigious addition to the comfort and health of the inhabitants! These two thousand bolls would otherwise have been distilled into whiskey, or sold to purchase that inflammatory beverage.

The price of barley in the Hebrides has varied for 20 years past, between 16 and 46 shillings per boll of 16 pecks; and yet the price there is not much more fluctuating than in other districts of Great Britain. The average price may be stated at 28 shillings per boll, of

16 pecks or 160 lb. weight. We conclude this section by repeating our advice to the Hebridian farmer to cultivate this grain with great care and perseverance. It is perhaps the only sort of white crop which he ought to retain of those left by his ancestors since grain was first introduced into the isles by the early converts to Christianity in the 4th or 5th century ;—it agrees with the soil and climate,—yields a good return,—and a most palatable and nutritious species of bread and of liquor.

If he can conveniently procure any quantity of the six rowed barley*, which we have seen cultivated to a great extent in Ingria and part of Livonia, and which is both early, hardy, and amazingly prolific, it would be advisable to try it on the deepest Hebridian soils. It is generally sown in the end of May or beginning of June, and reaped early in August. The ear commonly contains from 70 to 88 grains, whereas that of the real barley of Norfolk contains only 30, and the bear or bigg of the Hebrides at most 50 or 54 grains. The straw is also very strong, and usually resists the efforts of the most tempestuous winds without being lodged or laid flat on the ground.

SECTION

* *Hordeum hexastichom.*—LINN.

SECTION VII.—OATS.

THIS grain constitutes the bread of three-fourths of the Hebridian population. The species commonly sown in the northern isles, and in the more backward of the southern, is the old Scots grey oat, perhaps the very worst and most unprofitable sort of grain cultivated by any portion of mankind. The average produce is three seeds, or about three bolls of grain per acre, yielding a clear produce, when we deduct the seed, of about two bolls of oats, or one and a quarter of oat-meal, (valued at 16 shillings) per acre! This grain has not a single good property but one, which results from the very circumstance of its misery itself, *i. e.* it does not easily shake from the husk. Its skin or husk being rough, coarse, and tenacious, and the grain or seed being poor and shrivelled, the storms have not the same power over this wretched sort of oat which they have over the nobler kinds. Nothing but dire necessity could have induced the Hebridians to cultivate this grain for so many generations. They had no opportunity till lately of comparing together the different kinds of oats, and were satisfied with what they had from their ancestors. In certain situations the grey oat may perhaps still be continued with some advantage, namely, where no other crop can be saved from the attacks of the storms. But it must be devoted solely to cattle; for its produce in

meal is not worth half the labour which it costs. There is no doubt, therefore, but the grey oat should be entirely given up with any view to the meal which it yields; and, accordingly, we pass to the consideration of such oats as ought to be introduced and extended through the Hebrides. These are of *four* kinds.

1. *White Oats*.—This kind was not known in the Hebrides till the year 1748, when it was introduced by some public spirited gentlemen who had just returned from England and the south of Scotland, and seen the management of it in both countries. So great is the superiority of this oat to the common grey Hebridian, that we have seen a field this season in North Uist, and that too of deep peat-moss, which yielded ten bolls of meal per acre; whereas the grey kind, with the same management and manure, on the same soil, scarcely yielded two bolls of a very inferior quality of meal. The intrinsic value of the crops, straw included, was as six to one. The crop of white oats, fodder included, would have sold at L.24 per acre, this year of scarcity, on the spot, whereas L.4 would have been a high price for the other.

Of all the different varieties of this grain, the *Blainslie* oat, which is cultivated on high cold land in Lauderdale, is reckoned the best for the Hebrides. It is early, and yet the grain is so closely embraced by the husk that it rarely shakes or suffers any essential injury from the storms. These are advantages of immense importance in this climate, and recommend the introduction of this oat wherever a tolerable soil can be found for it.

2. The species commonly called *Polish*, *Friesland*, or *Dutch* oat, (for those are only different names for the same grain,) is remarkable for its quick vegetation and its early maturity, and has become accordingly a great favourite in many parts of Scotland. It is subject to one serious inconvenience in the isles, *i. e.* being easily shaken. In well sheltered situations, however, and on sharp low soils, it will answer extremely well,—for it gives a great return in meal—has excellent straw—and yields a very palatable species of meal. Tweddale seems to be its head-quarters in this kingdom, where it was, in 1748, first raised by *Mr Montgomery of Magbiehill*, by whose name it still goes in that country. On late and backward soils, it ripens frequently when the *Blainslie* oat fails. Upon the whole, however, the latter should be more extensively cultivated in the tempestuous Hebrides.

3. The black oat, often called the *Forfarshire* or *Mearns* oat, is sown in cold and exposed situations with much advantage. It is called black, not on account of any blackness in the meal, which is as clear and fine as that of any other kind of oats, but because the husk is dark, and communicates a dismal hue to the field on which it grows. This species should be sown on the poorer sorts of soils, and on land which is low rented and requires pulverization. Some farmers use it with success for the first season of newly reclaimed land, where they frequently receive good crops without any manure having been applied. They then manure for a green crop, and the ground speedily comes into good tilth and good heart.

4. *Potatœ* oats, as the largest grained and the most luxuriantly eared of this species of crop is now commonly denominated, are pretty generally introduced into the Highlands of Scotland, and have lately made their appearance in most of the larger Hebrides. We saw an excellent specimen of their cultivation at Capt. Cameron's, Lord Macdonald's chamberlain, in North Uist, and had unquestionable evidence of the advantage which may be derived from raising them on peat-moss soils. The crop was a most capital one, and yielded about 12 bolls of grain, and very nearly 12 bolls of meal per Scots acre.

This sort of oat, however, does not answer on poor, light, or very high land. It may promise well at first; but if the soil is not in good order, and tolerably deep, it will fall off in July, and the crop will totally fail. We found this to be the case with a field of it in Bar-ray, and with several fields in Mull and Tyree.

With regard to oats, as well as barley, a change of seed is very desirable, and indeed indispensable to carrying the management of them to any degree of perfection.

It is unnecessary, and would be tedious, to enter in detail on the management of oats in the Hebrides. They are usually sown in April, and reaped in September, or early in October. The rest of their treatment is pretty similar to that of barley, as far as they are paid any attention to, or considered likely to repay the trouble of reaping and harvesting. It frequently happens that the crop is so miserable as to make it advisable to drive the herds through it, and to consume it as grass, one half being trampled under foot; .

foot ; and thus it completes the impoverishment of the land without yielding almost any return to the tenant.

Bread is made of oats in different ways on the different islands. In some, as for instance in the Long Island and the adjacent islets, it is manufactured as already described, precisely like barley-meal. At a few places we met with the pernicious custom of burning the straw and husk, and making what is called *graddan* bread. This is probably the mode practised by the ancient Jews and other oriental nations, and which we translate *parching*. One-third of the straw and all the chaff are burnt as a sacrifice to the laziness of the operators, or to their epicurism ; for they allege that the *graddan* bread is particularly wholesome and palatable. We found it rather unpleasant, on account of its burnt *peaty* taste ; but would probably be reconciled to it in the course of time.

The recommendation of that compendious mode of dressing oats, is its simplicity and quickness. In half an hour's time from plucking the oats out of the ground, we ate the *graddaned* cake. The operation of preparing it was simply this : The ears were thrown in small heaps upon a clean hearth, burnt, gathered up, the grain of a dark brown colour, half burnt, broken with a hand mill, called a *quern* *, into a sort of coarse meal ; and this meal, with a little salt and water, made into cakes, and roasted before the fire.

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* The quern is forbidden on some Hebridian estates, as defrauding the miller of some part of his dues. It is called in Gallic *Brá-bhleth*, i. e. grinding *noisy stone*.

The price of oats in the Hebrides is always higher than in any other part of Scotland, because upwards of 20,000 bolls are annually imported at an average, and the freight, profits of the merchant, and insurance, must amount to at least two shillings per boll over and above the low-country market price. This is a tax of L.2000 per annum laid on the poor Hebrides by their worst enemy, *i. e.* their remote situation.

To a benevolent traveller, nothing can be more distressing than to see immense tracts of waste land, close by the sea side, and easily susceptible of improvement and tillage, while the natives loiter about with half-starved anxious faces, inquiring when and where the *meal vessel* (as they call the ships freighted by their landlords for carrying oat-meal from Clyde, Ireland, or the east of Scotland) is likely to make her appearance. In the isles of Skye, Lewis, and Uist, there are waste lands, not 200 feet above the level of the sea, or one mile distant from it, sufficient for feeding the whole population of those islands; and what is peculiarly provoking, these lands, whose natives thus suffer, not only are well calculated for oats, but they also belong to men eminent for charity, humanity, and goodness of heart.

SECTION VIII.—PEAS.

WE have found so few fields of peas which could be reckoned tolerable, in the course of the tour, that,
however

however unwilling to adopt such ideas in general, an impression remains of that species of crop being upon the whole unsuitable to the climate and atmosphere of the Hebrides. The light, gravelly, or sandy soil, in which they abound, cannot, indeed, be the cause; for peas delight in such soils; and their management, especially in Islay and Gigha, appeared unexceptionable. The conclusion is, that either the atmosphere, which is generally impregnated with a large portion of electric fluid, or the vapours of the Atlantic, or some other unknown cause totally independent of human agency, prevent the success of peas husbandry in these regions. If prosecuted, however, for the sake of the valuable straw which they afford, the best peas with which we are acquainted, and the most appropriate for the Hebrides, is the well known Magbiehill peas of Tweddale.

SECTION IX.—BEANS.

THE best recommendation of this crop is, that it will thrive in moist lands, clean the ground without exhausting it, and yield a large increase of good grain and straw. But beans are a late crop, and require deep strong land. They can rarely be reaped before October, and therefore will, we fear, never become a fa-

vourite crop in the Hebrides. If, however, on some lands, as in Trotternish in Skye, in the island of Lismore, and in Islay, they may prove suitable to the soil, the best mode of cultivating them will be to drill beans and peas together, so that the former may support the latter, while the peas in their turn render the bean stalks more firm and steady, and prevent the worst effects of violent gales. The lateness of both crops however, and the extreme difficulty of harvesting them, will, as already said, prove a powerful obstacle to their success, as regular field crops, in the Western Isles.

SECTION X.—TURNIPS.

No climate or soil is more generally adapted to the culture of turnips than those of the Hebrides; and, indeed, it is not easy to account for the tardiness of their introduction into a country of which the most pressing wants constantly remind the inhabitants of the propriety of raising them *. The scarcity of green winter provender

* It is singular that Maxwell of Arkland, in his volume on Scottish Husbandry, printed in 1743, does not mention the

der for cattle, and the consequent destruction of human food for preserving their live stock from perishing during that season, ought to have long ago opened the eyes of the natives to the immense advantages to be derived from turnips. We found them, however, in 1808—9, only on a few islands. Bute, Arran, Islay, Gigha, Collonsay, a very few farms in Mull, some in Ulva, Coll, and Tyree, some on six farms in Skye, on two in Lewis, two in Harris, and three in Uist,—comprehended the whole turnip fields that came within our observation. The proprietors of Islay, Bute, Collonsay, and Gigha, have double the number of acres under turnips which all the rest possess. Yet it is a pleasing fact, that the little island of Gigha alone had more acres of turnips in 1808 than all the Hebrides united had in 1767. Skye, and the northern isles, have just commenced this species of husbandry, and will very probably prosecute it with a degree of diligence proportioned to the advantages which result from it.

Wherever turnips have been tried, and tolerably well managed, they have succeeded as well as could have been expected. The soil is peculiarly fitted, by its lightness and porosity, for them; and the winter is so mild, that neither frosts nor snows prevent their keeping

the management of turnips as a field crop. They must surely have been known in Scotland before that time, as they were a favourite crop in Norfolk since the beginning of the eighteenth century!

ing sound during the three months in which they are particularly valuable, viz. December, January, and February. With their aid, the usual provision of straw and hay supports the stock till March and April, when potatoes and early grass begin to lend their assistance.

An inducement to the cultivation of turnips, peculiarly strong in this district, has been repeatedly stated in the course of our tour, by experienced graziers, *i. e.* they are powerful antidotes to the disease in young cattle called *black spall*. Diuretic and cooling, they are given to young beasts along with straw and hay, and now and then a little boiled barley, and prove very frequently effectual preventatives of the troublesome disease in question. This has taken place in Skye, Islay, and Collonsay, and ought to be universally known and remembered.

We now proceed, without any further recommendation of this very useful root, to the consideration of turnip management, in the order and arrangement of circumstances prescribed by the Board.

1. *Soil*.—The soil must be dry, pulverized, or free, clean, and well manured; “Ratio est habenda naporum, raporumque, nam utraque rusticos implet. Subactum solum pluribus iterationibus aratri, vel rastri, largoque stercore satiatum postulant,” *i. e.* Turnips and parsnips must be attended to, for both yield good food. The soil must be repeatedly ploughed and harrowed, and abundantly supplied with manure.—*Colum. lib. ii. cap. 10.* No soil throughout the Hebrides is fitter for this husbandry than the old loam of the infield farms, or the improved peat-mosses. Sandy, gravelly, friable

friable mould, upon a dry substratum, is also found to answer very well. All these abound in the larger isles, and in the greater number of the smaller; but the islands particularly calculated for turnips, are Bute, Arran, Gigha, Islay, Collonsay, Lismore, Jura, Mull, Ulva, Tyree, Coll, Skye, Uist, and Lewis. These might raise turnips enough for the use of all the Hebrides, and receive payment at so much per ton in ready money.

2. *Tillage*.—The lowland tillage of Berwickshire* is followed in Islay, Gigha, and Collonsay. The ground fixed upon is a well inclosed field of from two to 40 acres. It is ploughed and cross ploughed in November, or December, (the frost seldom or never preventing this operation); afterwards ploughed a second time in March or April, as soon as weeds begin to appear; then manured and ploughed in May, if deemed necessary for cleaning the ground, and for complete pulverization; and finally ploughed and carefully harrowed about the 20th of June for the seed furrow. This furrow must be straight, of from four and a half to six inches and three-fourths in depth, the drills regularly drawn, and the stiff clods, or other impediments to a fine smooth tilth, removed or broken by the roller and the harrow. Every ploughing after the first, is comparatively easy, and the last may be done with one horse. The seed should be sown pretty thick in the drills, above the dung

* Vide Kerr's ingenious and masterly report of the agriculture of that admirably managed county.

dung or manure. These drills should be from 26 to 28, or even in some cases 30 inches asunder, so as to admit of horse-hoeing with a double hoeing plough. In Yorkshire it is indeed customary to have the drills only 12 or 13 inches from each other ; but that plan excludes horse-hoeing, and therefore cannot be recommended, excepting in cases where human labour can be procured at a cheap rate, as in Norfolk, and where other circumstances suggest the propriety of hand-hoeing. The turnip seeds should be sown immediately after the plough has covered the dung, and the summits of the ridges have been consolidated by the roller, in order to receive the advantage of the moisture then near the surface, before it is dried up by the sun and wind ; otherwise the turnips rarely braird with vigour or dispatch. In a week or two after they begin to appear, the drills should be carefully cleaned of weeds, and thinned of the superfluous turnip-plants. The most promising and the strongest will of course be left, and at the interval of 6, 7, 8, 9, or 10 inches from each other in the drills. The period of horse-hoeing depends entirely upon circumstances which will be obvious to the cultivator. Should the farmer be disposed to house some of his turnips for securing winter food for a certain proportion of his cattle in the house, he will by this method generally raise 30 tons of turnips per Scots acre, to lay up in his barns or any other convenient place in October or November. The mild climate of the Hebrides, however, will seldom force him to recur to any such expedients for preserving his turnips ; and his sheep or cattle can generally consume them on the fields on which they grow, or in the barn-yard

to

to which they are carried from those fields, just as occasion requires. The farmer will find it as easy and cheap to raise 30 tons of turnips on an acre as 10 tons of potatoes, and they are better friends to the soil than even that valuable esculent.

3. *Sort.*—It is impossible to fix upon the sorts or kinds of turnips which are most likely to suit the general run of a country so extensive and so varied as the Hebrides. When any particular kind succeeds well, the seeds ought to be preserved, as is done in Northumberland, whose climate is pretty similar to that of the Western Isles, in the following manner: Let the portion of turnips allowed to run into seed, be reaped when the seed is nearly ripe, tied up in sheaves, and when dry put up into a long sack, where it is kept through the winter, and thrashed out in April or May. Vid. Agr. Rep. of Northumberland, p. 97.

4. *Seed.*—The quantity sown per acre in Gigha, Islay, and Collonsay, is from one and a half to two lbs. per Scots acre. That species of seed ought to be preferred which is found by experience the least liable to perish with drought, or to be destroyed by insects*.

5.

* The late Dr Walker is of opinion, that turnips should be sown in the Hebrides and Highlands early in May; but we have found by experience that the middle of June is early enough, and that even from the 20th to the 25th of that month is the most eligible period of the year. He recommends

5. *Fly.—Preventatives.*—No serious damage has as yet been done to the Hebridian turnip crops by any other enemies than too much drought, or too much moisture, or some mismanagement at the period of sowing them. In proportion, however, as hedges, inclosures, and plantations shall increase, (and it is desirable that they should increase very rapidly) it is likely that the common enemies of turnips will appear in these islands as well as elsewhere. They are, 1st, The *chrysomela nemorum*, or turnip beetle, with two wings, covered by two shells of a darkish chocolate colour, with a yellow line on each shell. It has six legs, and is very active. Its length is about the tenth part of an inch, and its breadth about one-twentieth.

2dly, The *alphis brassica*, or turnip alphis, a minute insect of the size of a grain of mustard-seed. Its colour is black. It has four wings, two longer and two shorter. Ten generations are produced in one season, and each successive generation beginning to breed at 12 days old, and every individual producing fifty of its species at each time, the first generation oviparous, hatched by the sun, the succeeding ones, except the last, viviparous—this fly may, in the course of one season, produce from one egg countless millions, and, as Dr Darwin says, *may in process of time destroy the vegetable world.*

3dly,

mends the red-topped turnip, as the hardiest, the latest, and the most reluctant to shoot, and as admitting of being earlier sown, and likely to attain maturity before the suspension of vegetation in winter.

Vid. WALKER'S Hebrides, vol. i. p. 281.

Sdly, Tenthredo rustica. Linn. is less frequent on turnips, but more on willows than the two just mentioned.

4thly, Slugs or snails occasion frequent damage. A sprinkling of lime or tobacco juice along the drills is recommended as powerful preventatives in some agricultural reports; but no effectual remedies have as yet been discovered. Ducks are employed in large numbers to destroy the caterpillar or tenthredo, and the snail, in some counties, with great success. They are confined from six in the evening of the preceding day, and turned into the turnip field very early in the morning, in a half famished state. They greedily devour the vermin in question, and are astonishingly quick-eyed and dextrous in catching them.

6. *Consumption.*—They are consumed in the byre or barn-yard, along with hay, straw or barley, and very seldom thrown before cattle in the fields, or eaten off by sheep, as in Berwick, East Lothian, and several counties in England.

7. *Value.—Price.*—The value of an acre of turnips in the Hebrides is inconceivable to a man who is accustomed to live in countries where provender can be purchased at every season of the year, and in such quantities as the consumer requires. It is only where all provender fails throughout the whole extent of a district that this auxiliary can be properly estimated; and such failure annually takes place in many of the Hebrides. We may accordingly, without any approach to exaggeration, reckon a Scots acre of tolerable turnips,
in

in the month of January, in the most westerly Hebrides, at the value of fifteen pounds Sterling clear gain. The best crop of oats or barley usually raised does not amount to one half the sum.

Some gentlemen have had the curiosity to weigh, and even to number the turnips of several portions of acres, so as to ascertain the quantity of food yielded under this crop by their lands. One individual has communicated the result of his own enquiries. He had 22,560 turnips upon an acre, each weighing, at an average of 50 of the middle-sized ones, very nearly seven pounds, or half a stone jockey weight *. The whole acre produced 157,920 lb. weight, or 70 tons and 10 cwt. of turnips. The crop was supposed equal in value to any three acres of barley, any three and one half acres of oats, and any two acres of potatoes in his possession. He supposed the intrinsic value of them, compared with hay and other provender for cattle, to be nearly four pound weight for a farthing, or sixteen pounds of turnips for a penny Sterling. The crop at this valuation would fetch L.41. 2s. 6d. Sterling. He declared that the land was not deemed previously worth more than 10 shillings an acre, and that the labour, seed, weeding, &c. cost him only six pounds eight shillings.

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* In Italy turnips grow to an immense size. Pliny mentions one of 40 lbs. and upwards, or 30 lbs. English averdu-pois, which he himself weighed. *Vidi quadraginta libras excedentia.* PLIN. Hist. Nat. lib. xviii. cap. 13.

The crop, it was confessed, was an *uncommonly fine one*, as were the *two succeeding ones* of barley and of hay. He had 10 bolls of barley, and afterwards 380 stone of hay from the same acre. The barley sold at 26 shillings per boll, and the hay at fourteen-pence per stone. The produce of this Hebridian acre, therefore, under turnips, barley, and hay, was as follows; viz.

	L.	s.	d.	
First year, turnips, 157,920 lb. at $\frac{1}{4}$ of $\frac{1}{4}$ d.	41	2	6	
Second year, barley, 10 bolls or 1600 lb.				
weight at 1.9 per lb. or nearly 2d.	13	0	0	
Third year 380 stone or 6080 lb. hay, at				
3 $\frac{1}{2}$ farthings	-	-	22	3 4
Add barley straw and hay aftermath,	10	10	0	
<hr/>				
Three years total produce,	L. 86	15	10	
Deduct expenses,	17	12	0	
Deduct the expenses,				
1st year, turnips	L. 6	8	0	Clear profit L. 69 3 10
2d year, barley	5	10	0	
3d, Hay	-	4	4 0	
Rent	1	10	0	
<hr/>				
Total	L. 17	12	0	

The gentleman, who gave this calculation, allowed that the price for hay was excessive, but he got that price, and might have received more, had he looked out for the highest offers. What an encouragement to a regular rotation of cropping in the Hebrides, and

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what

what an inducement to the extensive cultivation of turnips *!!

Modes of preservation.—As we have frequently observed, the mildness of the Hebridian winters will be favourable to all green crops, and it will generally prove a sufficient preservative of turnips in the fields on which they grow ; and the only means, therefore, requisite for securing the crop is a good inclosure. Another circumstance, however, must be attended to, namely, the danger

† Dr Walker enumerates the following advantages from the cultivation of turnips in the Hebrides, viz.

1. They are the best means of converting dry moorish wild land, or sandy downs, into arable.
2. In a cultivated soil, they afford what is equal to a fallow, while they yield a profitable crop.
3. They clean the ground both of root and annual weeds.
4. They feed a large quantity of cattle, when the green pasture is gone, and dry provender requires to be spared.
5. They raise the size and improve the breed both of black cattle and sheep.
6. They afford a great supply of dung.
7. They are the best preparative for a white crop.
8. They increase the quantity, not only of cattle but of corn.
9. They promote a progressive improvement of the soil.
10. They serve to introduce a polished and accurate plan of husbandry.
11. Wherever they have been extensively cultivated, their advantageous effects have been experienced by enriching the farmer, and by increasing the value and the rent of land.

ger which they run of being stolen away from the ground. So few are cultivated that, until they become more common, no man will leave them with safety exposed to the pilferers of the whole district or island; and therefore he will house them, or bury them in small heaps in pits dug in a dry part of the field next his byre and barn-yard. They must not be put together in large quantities, lest they heat and afterwards putrify, nor must they be buried in a moist state. Two labourers can bury 20 tons of them in a day; and that practice is perhaps to be generally recommended in the present state of the *larger* Hebrides*. Over all the smaller, the eyes of the master will be a sufficient guard, the police being easy and competent; and the turnips may be eaten off the fields during the whole course of the winter.

SECTION XI.—COLE-SEED OR RAPE AND CABBAGES.

NEITHER of these are met with in any fields in the Hebrides. A few cultivated in gardens evince, however, that they would thrive well in this country.

P 2

Cabbages

* Some persons recommend the piling of turnips in small heaps above ground, in barns or corners of fields, thatched over so as to be secured from rain, but to admit some fresh air.—Vid. Rep. of Inverness-shire, p. 163.

Cabbages are an excellent food for cattle, and stand a severe winter much better than turnips. They are also more accessible in time of frost; and what is a recommendation by no means contemptible, especially in some districts of Skye, as Trotternish and Sleat, they will prosper on clayey soils, however strong, where no turnips will grow, and they prove highly beneficial to such soils in opening and pulverizing them. When well managed, the value of an acre of cabbages will equal that of one of potatoes, for the use of cattle, and cabbages are not so difficult to manage, after the first hoeing, as potatoes.

They should be planted in drills four feet asunder, and at an interval of two feet from each other in the drills, from the middle till the end of April. The general management may be pretty similar to what we shall have to mention when we come to the culture of potatoes. The number upon a Scots acre of good land will be about 6000, weighing 12 pounds each, or 72000 lbs. or 32 tons.

SECTION XII.—ROOTA BAGA, OR SWEDISH TURNIPS.

THIS excellent species of turnip is introduced in Islay and Collonsay, and promises to become a favourite. The management is the same with that of
common

common turnips, only that this kind may be sown a month or six weeks earlier, bears transplantation, suffers no injury from the frosts of our mild winters, nor indeed from any ordinary degree of cold in the British islands, and therefore does not require those attentions in severe weather which other turnips demand. It is of a much slower growth than the turnip, and does not flower the same year in which it is sown. If it is to be transplanted, it ought to be sown the first week of April. The roota бага does not produce perhaps so weighty a crop as the turnip, but this deficiency is amply compensated by its other qualities. It stands out the severest seasons; and may be had in perfection during the months of March and April, when the Hebrides are always cruelly distressed for green food for young cattle. It is of a very nutritive and fattening quality, insomuch that the same cubic measure is found to contain one-fifth more weight than the common turnip.

The following account of this excellent root is given by Mr Lowe in his report of Nottinghamshire, and merits insertion here for the advantage of such Hebrilians as may be inclined to prosecute this branch of improved husbandry, and who may not have an opportunity of availing themselves of Mr Lowe's information in any other way than by means of this report.

"Mr Daiken, about the 10th of May 1794, sowed about four acres with the seed of roota бага, about two lbs. per acre, on good sand land, worth 20s. an acre*,

P 3

manured

* The land here mentioned would in the Hebrides very probably be reckoned worth four shillings an acre, an additional encouragement for the turnip husbandry.

manured as for turnips, and having been ploughed four or five times; the rest of the field, to the amount of nine acres in all, with common turnip and turnip-rooted cabbage, all broad cast. They were not transplanted, but hoed out nine inches asunder at three hoeings at 7s. 6d. an acre; no other culture. In November, began to use them for horses, giving at first clover and ryegrass, hay, oats, and beans; but finding that the horses did well upon them, left off all corn, and continued them on hay, and the roots only; fifteen were thus fed for about two months, were constantly hard-worked, and preserved themselves in very good condition. Mr Daiken is so well convinced that in this application they were worth L.30 per acre, that he would, in future, if he could not get them otherwise, rather give that sum an acre for one or two acres than not have them for this use. They lost their leaves entirely when the frost set in; but the roots were not in the least affected, though the common turnips in the same field were totally destroyed. Passengers passing through the field cut holes in them; which did not let the frost injure them, nor were those hurt which were damaged by cattle biting them. Some came to the weight of 16 lbs.; and Mr Daiken thinks the average of the crop 8 lbs. and much to exceed in tonnage per acre common turnips. Mr Daiken gave them also to hogs, cattle, and sheep. They are excellent for hogs; and sheep, being let into the field before the common turnips were destroyed, gave so decided a preference to the roota бага, that they would not settle on the common turnips while the others were to be had.

“ The

"The method of giving them to horses, is to cut off the top-root, to wash them, and to cut them roughly with a perpendicular hoe, and then given directly without keeping them to dry. The horses ate them with avidity, and seemed even to prefer them to corn. Their qualities appear to be singular, as they bind horses instead of relaxing them as other roots do. One mare was kept entirely upon them and straw, worked every day, did well, and never looked better: This mare was more bound by them than the rest. They have a strong effect upon making the coats fine; and one or two affected by the grease, were cured by them, as they act as a strong diuretic. In this mode of application, one acre maintained 15 about two months; and Mr Daiken is so well convinced of the utility of the plant, as well as many of his neighbours, that he intends, and they also, to increase the cultivation much.

Mr Daiken suspects that there are two sorts of the roota бага, because some, upon cutting, are white, but in general yellow, otherwise of the same external appearance. The yellow is the best *."

* The contradiction in this account of the roota бага, stating that it is at once a strong diuretic, curing the grease, and also of a binding quality to horses, does not invalidate the leading features of the plain and distinct statement given by Mr Lowe.

SECTION XIII.—CARROTS.

CARROTS are no where generally introduced into Hebridian field culture; nor do we suppose they speedily shall. In Suffolk, and other counties in England, where a deep, sandy, free soil abounds, they are found a profitable crop for horses and pigs. They give a peculiar glossiness and beauty of skin to the horse, which no other food is discovered to communicate.

In Collonsay, we found some capital drilled carrots this season, several weighing three lbs. and two-thirds and perfectly firm and solid in the heart. These were the best which we met with.

Where Swedish turnips are found to answer, we apprehend that the cultivation of carrots will seldom gain ground; and the same holds true of parsnips, beets, and many other sorts of roots known and grown in England. One of the finest specimens of beet root we have seen occurred in Collonsay. It was round and beautiful, and weighed three lbs. and a half avoirdupois.

SECT. XIV.—POTATOES.

POTATOES constitute *four-fifths* of the present Hebridian nourishment. The same is no where else the case
excepting

excepting in some districts in Ireland, and in the mountainous regions of Peru in America. We shall therefore dwell longer upon this staff of Hebridian life than to many persons may appear requisite, and strictly follow the method enjoined by our instructions, premising however a short account of their introduction, and of the causes which have given them such comparative importance in this district of Great Britain.

The potatoe * is a native of Peru, where it is found wild, and has been the sole corn or food of the natives for many ages, and down to the present day. They make it into bread which they call thunno †, and supply with it the numerous labourers in the mines of Potosi and of Quito. The American Spaniards use potatoes also to a great extent.

Sir Francis Drake imported them into Europe in 1586, from the Spanish West India colonies. He gave some to Mr Gerard the botanist, who planted them near London, and sent some seed potatoes to Clusius in Holland. The latter planted them in various parts of the Low Countries; and from thence they made their way into Italy. As Sir Francis Drake carried home with him most of the English colony of Virginia, at the same

* *Solanum tuberosum*. Linn.

Bun-taghta i. e. choice root. Sir John M. Murray, Bart.

† Vid. Ueber den vortheilhaftesten Anbau und die beste Benutzung der Kartoffeln, i. e. On the most advantageous manner of planting potatoes, and the most profitable mode of using them.

Leipzig, 1794, b. Voas.

same time that he imported the potatoes, a mistake took place in England about their original country. It was supposed to be Virginia. Peru is however their native soil; but they answer in every climate and almost in every conceivable sort of land, provided they be skilfully managed*.

The first time that potatoes were planted in the Hebrides was 1743, by Mr Macdonald of Clanranald, on his return from a visit to his relative the Earl of Antrim in Ireland. It is still told that, on his arrival, he offered many of his tenants some potatoes for seed, and insisted upon their planting them. The people were unwilling to comply. He threatened, and was reluctantly

* Potatoes have been repeatedly subjected to chemical examination. Parmentier published an elaborate dissertation on their culture, uses, and properties about the year 1776, which contributed considerably to promote the cultivation of them on the continent. Dr Pearson communicated to the Board of Agriculture a valuable essay on potatoes, containing a set of chemical experiments on them, performed with his usual skill and ingenuity; and very lately Einhof has published an elaborate analysis of the root, in the fourth volume of Gehlen's Journal. From 20 parts of dried potatoes, he obtained,

2.5 Silex.

6.0 Lime.

4.0 Alumine.

7.0 Magnesia.

Einhof examined different kinds of potatoes. He found the same ingredients in all, but the proportions varied considerably.

luctantly obeyed. In October they brought the crop to his door, and told him that he could indeed compel them to be planted and raised, but not to be eaten, and he was welcome to use them as he thought fit; they would never eat these detestable roots, &c. In a short time, however, they came to judge better; and now they subsist 9 or 10 months of the year principally upon potatoes. They soon spread over the Hebrides; and at present constitute, as we have said, at least four-fifths of the food of the lower classes of the inhabitants, as well as one-third of that of their live stock.

1. *Soil*.—Potatoes thrive in all Hebridian soils, excepting stiff clay, of which there are not perhaps 4000 acres in all these islands. They answer very well in peat-moss land, as well as in sand or gravel. It is by a potatoe crop that all the wild land has hitherto been reclaimed; for sowing oats as a first crop is but a very rare procedure, and was never practised until the last half dozen years.

Of the 500,000 acres in the Hebrides susceptible of tillage, either with the plough or caschrom, 400,000 are well adapted to this crop, and we have no doubt that in process of time a very considerable proportion of them will carry it. The soil, too, becomes every year more and more favourable for this species of culture, in proportion as the increase of population forces the inhabitants to improve new lands.

Where an Hebridian, however, has a free choice, as he commonly has, of fixing upon different spots of his land, all varying in quality, for his potatoes, he ought carefully

carefully to study two things: 1. To have all his potatoe land as well protected from the westerly winds as possible. The storms from that quarter sometimes break in pieces all the potatoe shaws which are of any length, and completely ruin the crop, in the month of August or early in September.

2. He ought (if nothing very important prevents it) to plant his potatoes on unimproved land, leaving the land already reclaimed for other crops of corn or of grass.

Having fixed upon the piece or pieces of ground which he means to devote to potatoes, he should drain it effectually in the way already described in our section upon barley: It is necessary, however, sometimes, in this precarious climate, to have (what is vulgarly called) two strings to his bow; and, in order to make sure of a certain provision for his family, the Hebridian will plant some potatoes on a sure, dry, improved soil, and some, indeed, by much the larger quantity, on unreclaimed land, as we have just recommended.

2. *Manure*.—Either lime, marl, dung, sea-weeds, (*alga marina*) or compost manures of the common kinds, or any possible mixture and combination of these will answer for manuring potatoe lands. Some writers * would reject sea-weeds, on the supposition that
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* Among others, Dr Walker writes thus on the manure of potatoes: "Sea-weeds are much used, but they are an improper manure for the potatoe crop. They render the
potatoes

the crop of potatoes degenerates in quality, being soft, watery, and less nourishing than the produce of other manures. It is confessed that they are in general less dry than potatoes raised from dung, but there is a heavier crop, and the land is much cleaner after sea-weeds, which are quite free from any seeds of weeds or of corn, than after dung; and it is to be considered, too, that sea-weeds are a much cheaper manure than any other in the Hebrides, and perhaps the very best adapted to the climate and general soil of these islands. The quantity of manure laid upon the acre is a matter which must depend upon a thousand circumstances, which the practical farmer can alone determine. The general practice here is to manure too thick, and to plant the sets too thick also, so that the whole surface of the potatoe ridges is quite covered by their tops, and no free circulation of air can exist. This is every way pernicious, and must gradually yield to a more judicious method. Let the manure (sea-weeds*) be laid three inches thick on the ridges, soon before or after ploughing or caschroming the ground, and a sufficient stimulus for all the purposes of potatoe husbandry is applied.

potatoes waxy and watery, which are neither so good for present use nor for long keeping, as the dry and meally potatoe," &c.—*Vid. Walker's Hebrides*, vol. i. p. 253.

* The epithet *vile*, given by the Roman poet to this manure, is by no means applicable in the Hebrides; which, without it, could scarcely maintain half their present population.

applied. It must, however, be observed, that sea-weeds of different kinds differ very widely in alkaline power from one another. The Hebridians distinguish them by very appropriate names, as follows, viz.

1. *Feamuin dhubh*, (*i. e.* black sea-ware,) so called from its dark colour, in consequence of being exposed to the sun and air during the whole period of its existence, excepting for four hours out of 12, two hours before, and two hours after, high-water or flood.

2. *Buiag*, (*i. e.* yellow sea-ware,) which is less exposed to the air, and dry only for four hours out of the 12.

3. *Braggaire*, (*i. e.* crackling sea-ware,) so called from its cracking loudly during the operation of burning. This last species is seldom or ever cut with mens hands, like the two former, from the rocks on which they grow being covered by the sea all the year round. It is cast on the shores after being torn from the rocks by the agitation of the sea, and frequently after being tossed about for many weeks or months through the ocean. If obtained fresh and newly severed from its parent rock, it is the best of all the three kinds of sea-weeds which we have mentioned; but this is so seldom the case that its general character is very bad; and, being supposed unfit for the manufacture of kelp, is devoted to what, on many islands, is deemed a subordinate purpose, the manuring of the tenants lands. The *buiag* is the strongest of the three, and, generally speaking, the preferable manure; but it is entirely des-
tined

tined for kelp, as is also the greatest part of the feamuin dhubh.

In manuring potatoes, therefore, regard must be had to the relative quality of the sea-weeds themselves, as well as to the nature of the soil which they are to serve. If a ridge requires 10 cart loads of buiag, it will need 12 of feamuin dhubh, and 14 or 15 of braggairé*, &c.

The Hebridian often forgets that moderation in manuring, like moderation in every other transaction, is true wisdom: He heaps up sea-weeds on his ridges until they overwhelm the soil, and is afterwards astonished at the ingratitude of his land for refusing to pay him back for the favours which he had so liberally heaped upon it. Unfortunately, too, no advice can be given in this case. Experience alone, and a comparative view of different modes of manuring, and of the crops of various seasons, can prove of any avail.

3. *Mode*.—1. *Lazy beds*.—This is the common mode of planting potatoes in the Long Island, Skye, Mull, and in most of the larger islands; and although tedious and expensive, it will probably long continue to prevail.

* It is one great advantage of this species of manure, and which we have found uniformly claimed by it over the Hebrides, that the disease in potatoes called the *curl* is unknown on lands upon which sea-weeds are used. We do not give it as a fact, ascertained by positive proof, but we give it as the general belief of the people, and as entirely consistent with our own experience for 25 years past.

vail. The soil is turned with the caschrom, as we have already described; the earth from the ditches, between the different ridges, is cast with a common spade or shovel upon the ridges; and the potatoe seeds are planted generally broad cast, without any regard to regularity, at distances of five or six inches from one another. It is obvious that this mode of planting must be carried on by the dibble, and a very tedious and awkward mode it is; but the returns are great, and a very secure and early crop usually repays the labourer's toils.

The most abundant crops, as well as the earliest, are obtained when the potatoe cuttings are laid upon the manure, and covered up with pulverized soil the depth of three inches,—such cuttings being planted in regular rows, the rows 27 inches asunder, and the plants from 12 to 16 inches distant in these rows. Weeding will then prove an easy operation, the free admission of air will give vigour to the stem, and promote the health of the whole plant, while the ground will receive all the advantages of a green crop fallow.

2. *Drills*.—Drilling and horse-hoeing potatoes are general practices only in Islay, Bute, Gigha, and Collonsay. This mode, however, will gain adherents in proportion as labour becomes dear, and as other improvements advance. It unquestionably is the preferable mode in every case in an improved country; and where no waste lands are to be subdued. But in the Highlands and Hebrides, especially the northern isles, it is proper to continue the operations of the caschrom in the lazy bed mode of cultivating potatoes, both because
it

it is in itself the most effectual for present advantage, and because it gradually brings into a state of aration, and of regular and valuable cultivation, lands which would otherwise for ever remain untilled and unproductive. The question is not, whether drilling and horse-hoeing, or caschroming and planting with the dibble, be the preferable mode on the same ground? No such thing: the question is this: "Ought the Hebridian to give up his caschrom and dibble on land where neither horse nor plough can in the first instance be used, — or ought he, because the maintenance of his family is a tedious and laborious task, give up that task in despair, and remove to a country where neither caschrom nor dibble are necessary."

We have not, in all the Hebridian tour, met with one single instance of a man of information and experience recommending the abolition of this Hebridian mode of tillage for potatoes on Hebridian soils *.

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3.

* "When the horse-hoeing husbandry comes to be understood in the highlands, it will be first and readily applied by all the people to the potatoe crop. The best arable land will therefore be devoted to this purpose, and the present method of raising potatoes in lazy beds be deserted. This, if possible, ought to be prevented. In a cultivated country, it is contrary to the interest of the tenant, of the landlord, and of the public, to raise potatoes any other way than with the plough. But where there is much wild land that can be profitably reclaimed by the potatoe crop, and with spade culture, the case is different. In this case, the interest of the landlord, the progressive improvement of the country, and

8. *Dibbled*.—Two-thirds of Hebridian potatoes are planted with the dibble. It is a wooden instrument, sometimes pointed with iron, with a sharp point for the purpose of easy insertion into the ground, and furnished at one side with a bit of additional wood for enabling the workman to push it into the earth with his foot. A second person commonly casts the potatoe cuttings into the holes made by the dibble, and thus they proceed until the ridge (called in Gaelic *feannag*) is completely sown. Both operators then, with wooden rakes or mallets, beat the dibbled surface of the ridge, until

and indeed the interest of the tenant, if he has a lease of any considerable length, are all deeply concerned in the efforts of the spade. It is true, indeed, that the horse-hoed potatoe crop, by affording more present profit, and by being obtained with less labour, is more tempting to a tenant. Unless he is restrained, it will therefore occupy the best, perhaps the whole, of the infield land upon a farm, and the uncultivated ground will remain neglected. But it should be remembered, that by the lazy-bed culture much arable ground has been already acquired; and that, by the same practice, a great addition may be annually made to the cultivated land in the highlands; and further, that when horse-hoeing comes to be practised, though it is certainly first to be employed upon the infield land, yet this should not be upon a crop of potatoes, but upon other green crops, which cannot be raised on a wild soil. It is for these reasons expedient, that the spade culture of potatoes should continue to be encouraged, and confined as much as possible to uncultivated land."

Vid. WALKER'S Hebrides, vol. i. p. 252-3.

until the holes are shut up and covered in with pulverized earth. Thus the ridge remains until the middle or latter end of June, when weeding by the hand commences, the most troublesome and tedious part of the process of potatoe husbandry here. An obvious improvement of the dibble would be to give it two or more points, so that the operator might make two or more holes at once, and these too at equal and proper distances from one another. We found this improvement only in two farms in the Long Island, but hope that it shall soon pervade the whole of them. The depth of the dibble holes is various, and from two to eight inches, according to the strength or judgment of the workmen. This might also be guarded against, as well as the other irregularity of distance, by a dibble of improved form, and of which the part destined to pierce the ground might be of a certain fixed length and width. The handle should be five feet long, and the dibble at least four inches deep for common light soils.

4. *Preparation.*—The preparation of both soil or ground and seed in the Hebrides, is extremely simple. The former is turned with the spade, after having been manured with sea-weeds or with dung, and the cuttings of the potatoe-seed are dibbled in as we have already described. Some attention is paid by the more skillful cultivators to the cutting as well as the selection of the seed. The best potatoes are chosen; and those which are most free from any visible defect in skin or form, *and those which have fewest eyes for their bulk*, are cut into four or more pretty large pieces, of an inch, or ten
lines

lines in diameter, with the *principal eye as nearly in a central part of the cutting* as possible. The operation is never entrusted to boys or young girls, like the weeding, and sometimes the sowing and raking; and perhaps to this circumstance of judiciously cutting and selecting the seed potatoe, may in some measure be ascribed the absence of the curl from the Hebrides*.

5. *Tillage*.—Potatoe-lands are tilled with the cashrom, plough, common spade, or shovel, in the way already mentioned in our section on barley. They never, excepting in the improved islands, receive a second or third furrow, but must grow as well as they can through the rough clods left by one turning of the surface. It is astonishing, however, how well they thrive with this management, and what returns an acre of them yields; and we therefore hope that the extension of their cultivation to the waste lands of the larger islands will soon make the Hebrides a plentiful, populous, and happy country.

6. *Setts*.—The common method of planting these is, laying them upon the manure in rows two feet asunder, and the plants eight inches wide from one another in the row. A boll and three quarters of potatoes will in this

* The potatoes which have the smallest number of eyes in proportion to their size, are always found to give the best seed; and it is frequently observed, that a small potatoe of half a quarter of a pound in weight, has double the number of eyes of a potatoe weighing a pound and a half.

this way suffice for planting an acre ; and the returns usually are from 12 to 20 fold. This mode of planting is common in Bute, Islay, Gigha, and Collonsay, and begins to make its way into the northern isles.

7. *Sort.*—The most common sorts at present in the Western Isles are, 1st, The Scotch : 2d, The round Spanish : 3d, The white round Irish : 4th, The pink-eye : 5th, The long kidney : and, 6th, The Surinam, or yam. This last mentioned is used only for food to cattle ; the other sorts are cultivated and consumed indiscriminately in every family by man and beast.

It is difficult to ascertain what sort is the most general favourite over the Hebrides. In some islands, only the white Irish and the pink-eyed are known ; in others, the long kidney has usurped complete dominion of the fields ; and in a few, the Dutch or Spanish round potatoe is in the highest estimation. One of the most judicious potatoe planters in Scotland, Sir Archibald Grant of Monymusk, Bart. has decided the question, by a variety of accurate experiments, in favour of the round white Irish potatoe, from a certain quantity of which he had, in 1801, the astonishing number of 210 *returns* *.

8. *Planting.*—Where the horse-hoeing husbandry is not introduced, the usual mode of planting is, as we have already mentioned, by dibbling in the seeds (but never any roots, apples, or portions of shoots) after the ground

* Vide Farmers Magazine, vol. iii. p. 144.

ground has been turned by the *cachrom*, plough, or common spade. The only error, universal over the northern Hebrides, and which the natives themselves generally confess, is, that they are planted too closely on one another. One-third of the seed might at least be spared, and the crops would be earlier and more vigorous than they generally are at present.

9. *Horse and hand-hoeing*.—The expence of hand-hoeing is double that of horse-hoeing, in some cases triple, and consequently must in process of time be abandoned, where the latter is at all practicable. On the kelp estates, where the time of the farmer is occupied from May till August in the manufacture of kelp, horse-hoeing will probably soon become general on all improved lands; but newly reclaimed and mossy ground will not admit of that economical mode of hoeing, and the old method must still continue to be followed.

10. *Weeding*.—In order to secure a good potatoe crop, the ground in which the seed is planted must be carefully weeded at least three times. 1st, About three weeks after the planting: 2dly, About the middle of June: and, 3dly, Towards the end of July. If the ground is preserved clean from weeds until the potatoe stems attain considerable luxuriance and strength, they will themselves afterwards choke all weeds, and maintain complete sovereignty of the field. But if they are allowed to struggle for this sovereignty in their infancy, a poor shrivelled growth, and often a rapid decline, and a melancholy end are the consequence. One ridge of potatoes of the Irish round sort, thrice weeded, near the

the village of Stornoway in Lewis, yielded, in 1807, eight barrels of potatoes from one peck of seed, i. e. forty fold. Another ridge, of precisely the same dimensions, the same soil, and seed, and manure, but neglected in the weeding, yielded half a barrel of an inferior or degenerated and sickly kind of potatoes, or *one sixteenth part* of the former, and was three weeks *later* in ripening.

11. *Tops*.—Some persons have a custom of cutting off the tops of their potatoes, or the flowers of those which are tall and luxuriant, and that plan has been frequently recommended by high authority. In our own practice and experience, we have not found it to answer. Sir Archibald Grant of Monymusk condemns it in every case. Vid. *Farm. Mag.* v. iii. p. 145. It sometimes happens that the tops are too luxuriant, and promise to continue growing in length until the latter end of Autumn or beginning of winter, when the frosts set in, and check them at once, at the same time preventing the roots from deriving the beneficial and gradual nourishment from them, which better proportioned stems would afford: in these instances, the tops may be cut off and given to cattle in July, without any *very* essential injury to the crop, and the quantity of food which they yield to young stock in this way is a powerful temptation. In general, however, the goodness and early ripening of the root depend upon the complete preservation of the stem; and accordingly we find the crop very much injured, or perhaps ruined altogether, by horses or cattle biting off the stems early in the season.

12. *Taking up.*—The common mode of taking up potatoes in the Hebrides is by loosening the earth with the plough, spade, or caschrom, and then picking up the roots with the hand. This operation is generally postponed until the month of November, or at least until the middle of October, when danger from frost and rains is apprehended. It frequently happens that a few days delay ruins the whole crop, either by rendering the harvesting of it in good order impossible, or by the potatoes being frozen and rotten in the ground. One great cause of this pernicious delay is the lateness of the oat and hay crops. If the earlier and better sorts of oats are introduced, and sown grasses tolerably well managed, the month of October, and indeed a considerable part of September, will be dedicated, without inconvenience, solely to securing the potatoes.

13. *Storing.*—This part of their management is better attended to than any other. They are put into small pits or ditches, in a dry, sandy spot of ground, close to the farm-house, secure from thieves (who indeed rarely meddle with this kind of crop) and about the depth of 14 inches under the surface of the ground. Some farmers store them in barns on a dry floor, where in spring they are frequently turned about and moved from corner to corner of the house, to prevent their growing; and are thus preserved in perfection until the month of July, or indeed until the new potatoes commence to supply their place in August. Exposure to the open air of a house is sometimes found to hurt them, in winters more rigorous than usual; but, generally speaking, few farmers lose any considerable quantity

city by injudicious storing, and the climate and soil are peculiarly favourable in that respect.

The practice of kiln-drying and slicing them, so much and so deservedly recommended by many agricultural writers, has not yet been introduced into the Hebrides; nor is it likely that it ever shall to any considerable extent. It is too artificial and tedious a process for persons so unsystematical in all their operations; and the quantities of potatoes requisite for their household consumption are so great, that they would laugh at the proposal of slicing and barrelling, or otherwise storing up a stock of them in times of plenty for a resource against years of scarcity, as quite fantastical and absurd. So great, indeed, is the variety of their soils and climates, and so important is their potatoe crop, that, considering the general mildness of their climate, there will rarely occur any chance of a general failure of it in these isles. Should any such, however, happen, the evils which would result must exceed all calculation; and it is unquestionably the interest of landlords and gentlemen-farmers, to accustom the lower orders of their countrymen gradually to every process by which potatoes can either be increased in quantity, improved in quality, or secured fit for use during as long a time as the nature of that precious root will permit.

14. *Produce.*—When we consider the general desultoriness and negligence of Hebridian agriculture, and at the same time the quantity of potatoes consumed by the natives, we shall not be astonished at the extent of ground which this crop covers. The most moderate computation makes it 30,000 acres. The produce of these .

these 80,000 acres, the season succeeding potatoes, would, if barley or oats were decently well managed, be 150,000 bolls of meal of either kind; and the third year, supposing each acre to produce 150 stone, 4,500,000 stones of hay. With the present system, they yield not 50,000 bolls of meal, and no hay at all, excepting on the improved islands so frequently mentioned.

The produce of potatoes per acre was, in Collonsay, Gigha, and Islay, on some farms nearly 40 bolls. They were selling in May 1808, at the enormous price of half-a-guinea per boll; so that the produce of an Hebridian acre, which rented for five shillings, was sold at L.21 Sterling, namely *eighty-four times* the rent of the land. Near the village of Bowmore in Islay, we found on acres possessed by inhabitants of that place, and latterly reclaimed from peat-bogs, especially on land belonging to Mr H. Simpson merchant there, a crop of potatoes, which any man acquainted with the culture of that plant would pronounce equal to 40 or even 45 bolls an acre. Six years preceding, the land in question was not worth sixpence per acre.

If we calculate the quantity of human food (now ascertained to be inferior to no species consumed by any portion of mankind, either in wholesomeness or in the mental and corporeal qualities which it maintains,) yielded by the acre of potatoes in the Hebrides, the result is equally exhilarating. On the islands where servants are contented with a potatoe diet, with a certain proportion of meal, either of barley or oats, the pound weight of potatoes is understood to be equal in value to a quarter of a pound of meal. Oat or barley meal is
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very nearly in nutritive power to common flour as 7 to 10; or at least, 10 lbs. of such meal are equal to seven lbs. and one-eighth of flour. But as oat-meal may be considered the staple food of the great mass of the people in Scotland, we shall in our comparison of the produce per acre, and of the labour and costs of both species of crops which may be said to constitute the food of the Hebridians, assume oat-meal as the standard, and that at the average price of thirty shillings per boll for the last ten years. The boll is 16 pecks or 160 lb. weight; the common boll in the Western Isles being 10 stone of 16 lb. per stone.

OATS.

An acre or 3 bolls of oat-meal at 30s. L. 4 10 0

The acre of oats at 5 bolls of grain, reckoned a good crop, yields only 3 bolls meal, and that meal consequently costs $2\frac{1}{4}$ d. per lb.

An Hebridian consumes 2 lb. meal per day or 730 lbs. annually, or very nearly 4 bolls and one half

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POTA-

POTATOES*.

An acre or 30 bolls of potatoes, at 7s. 6d. L. 11 5 ●

The acre of potatoes, at 30 bolls, an average good crop in the improved Hebrides, amounts to nearly 10 tons by the common calculation.

Ten tons or 22,400 lb. weight per acre, at L. 11. 5s. affords a lb. of potatoes at half a farthing.

An Hebridian consumes 8 lbs. of potatoes per day, or 2920 lbs. annually, at half a farthing

1 10 5

Surplus, L. 9 14 7

From this calculation, which we trust will appear perfectly fair to such as are acquainted with the Hebrides, some very striking results follow.

1. The soil, climate, and manures of the Hebrides are particularly suited (like those of Ireland) to the cultivation of potatoes.

2.

* It must be confessed that the consumer of potatoes requires more additional food, such as fish, milk, salt, and meat, &c. than the bread-eater annually; but we here merely state the quantum of nourishment at a certain price produced by a specified portion of land in the Hebrides, under the respective crops *comparatively*, without at all entering into a general argument respecting the propriety of cultivating the one at the expence of the other.

2. Potatoes are raised in the improved islands with as much judgment, skill, and economy as in any part of the world; seeing that an average crop is fully equal to any crop of potatoes in any county of Britain.

3. While the average produce of other grains or crops, as oats for instance, is no more than one-third per acre of that of the same crop elsewhere, the produce of an acre of potatoes is equal or superior.

4. It appears highly probable that the peculiarity of freedom from the disease in potatoes called *the curl*, and which is so pernicious in England and the lowlands of Scotland, arises from the nature of the Highland and Hebridian soil, air, or manures, or from some cause or causes connected with these and with the circumstance of potatoes being chiefly planted on waste or newly reclaimed lands.

5. It appears, that while an Hebridian acre under oats yields, at an average of the last 10 years, only two-thirds of the food annually consumed by *one individual*, (taking the whole population over-head,) an acre under potatoes affords maintenance for $7\frac{1}{2}$ individuals.

6. The gross produce in money, at an average of 10 years, of an acre of oats in the Hebrides, is about L. 4. 10s. Sterling, that of an acre of potatoes L. 11. 5s.

7. The gross weight of food growing on an acre of oats is 480 pounds averdupois; the weight of potatoes is 22,400, being to the oat-meal as $46\frac{1}{2}$ to 1.

8. It appears that a good crop of potatoes, growing upon one acre, will support a family of the average number of persons, namely, $5\frac{1}{2}$ in the Hebrides, making

ing due allowance for waste, while it requires the food produced upon $7\frac{1}{2}$ acres of oats to feed the same number.

9. Supposing oat-meal to be, in point of nourishment, superior to potatoes in the proportion of four to one, yet the quantity of potatoes produced upon an acre in the Hebrides is such as to make the cumulative proportion in favour of potatoes as $11\frac{1}{2}$ to 1.

10. Were Hebridian potatoes uniformly managed as they are on the improved islands, the 90,000 acres annually under that crop would support a population of 157,500 souls; which, with the nourishment to be derived from their other crops, and from fish, shell-fish, sheep and cattle, &c. amounting to nearly the same quantity, would feed upwards of 300,000 souls,

11. The produce of potatoes, as appears from comparing the various details upon this subject, with what has happened lately, and still continues to take place, in the Western Islands of Scotland, as well as in Ireland, promises, by tolerable management, to triple the number of inhabitants every 75 years, without burdening the country, while waste lands are to be procured under 10s. per acre*.

15.

* *Vid. & comp.* A statistical and historical inquiry into the progress and magnitude of the population of Ireland, by Thomas Newenham, Esq; 1804.—Mr Arthur Young's agricultural tours in Ireland.—A short address to the most Rev. and Honourable William Lord Primate of all Ireland, commendatory of some commutation or modification of the tithes

15. *Price.*—A perishable and bulky article, like potatoes, must naturally be subject to great fluctuations in price in every country, but especially in a region so sequestered as the Hebrides. Within the last 10 years, accordingly, we have seen them sold in the Long Island, in Mull and Skye, &c. at prices as various as 2s. and 12s. per barrel. The average price in the islands which are near good markets, as Bute and Arran for instance, is 7s. 6d. per boll; and in the remote islands from 3s. to 5s. or 5s. 6d. and in years of scarcity 12s. or 18s. per boll.

16. *Application.*—Potatoes are used chiefly in lieu of bread by the great mass of Hebridians, plain boiled, and without any thing else but a little milk or salt, and in winter some salted meat or herrings. One-fourth of the quantity raised is given to cattle, horses, and pigs, between the beginning of February and the middle of May. The best farmers, such as Shawfield, Macniell of Collonsay, Gigha, and a few others, use large boilers, and either steam or water, for preparing their potatoes for young stock, and find that they answer in every respect better boiled than raw. Boiling deprives both potatoes and turnips of a great proportion of their watery juices, leaving the most nutritive and farinaceous parts behind; the exclusion of these juices, however, is more completely effected by steam, which, as
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tithes of that country; by the Rev. H. Dudley.—A sketch of the state of Ireland, past and present, 1807.—Walker's economical history of the Highlands and Hebrides, 1808.

the application of it is at once cheaper and less troublesome, ought to be preferred. A very small proportion only of the quantity cultivated is made into starch, though that mode of application is universally known and understood; and none at all is made into bread. One reason why the Hebridian prefers potatoes in their natural state to them in any artificial form of meal or bread, &c. is, that when at sea he can boil them with salt water, and he thereby saves an expence and inconvenience, sometimes a heavy one, which he would otherwise incur. It is doubtful also, whether all the processes so pompously detailed of manufacturing potatoes into bread, would, though perfectly well understood, prove of any benefit to the Hebridian, who has neither yeast, flour, nor any single ingredient requisite for the purpose in his family excepting meal and water.

17. *Exhaust, or improve.*—When potatoes were first generally propagated in Scotland, this question of course excited much attention; and we accordingly have, in the "*Transactions of the Improvers in Agriculture*," printed at Edinburgh in 1743, by Mr Maxwell of Arkland, one of the members of that respectable society, their sentiments upon it, p. 171.—"This one thing I can say with assurance, that it is possible to get an acre of potatoes worth from *ten to twenty pounds Sterling* or *upwards**; and yet that the ground shall be

* Comparing prices in 1743 with what they are at present (1809), we may safely value the produce of such acre

be *equally good* for the *succeeding* crop, as if it had been summer-fallowed without them, even though the greens (stems) when fully flowered, be applied to cow-feeding; for which purpose I have found them to answer well; and are by some thought as good, yea more nourishing, than the same quantity of clover, without hurt to the roots*; which by that time being become strong, will make the greater demand of food, and must swell in proportion to the quantity they get and retain; and of which food they will have the larger provision, as the waste by the stalks is by the cutting prevented, at the time when the plant is exerting itself for propagation; which is the time when all plants perspire most, and therefore make the greatest demand upon the earth.—How beneficial an improvement is this? How many good ends and purposes does it answer? The greedy husbandman's mouth seems to be stopt: he never had good reason, now he has none at all, to cry out, What pays the rent the year the ground lies fallow? By this potatoe-husbandry he gets a good crop above ground, an exceeding good one under it, and the ground *improven* as much as if it had lain summer-fallow bearing no crop; and all this

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of potatoes at from 30 to 45 pounds Sterling,—making due allowance for their present abundance, and their rarity at that period.

* This is disputed, and very much doubted, or rather denied, by experienced potatoe farmers.

in one year, and upon a very moderate expence. What more can the heart of man desire? What! would he lie in his bed, and have wealth come in at doors and windows to him? No; '*in the sweat of his face must he eat bread,*' and besides he must exercise his head, his reason, as well as his hands, design prudently and execute carefully," &c.

However deserving potatoes may be of this lavish encomium of Mr Maxwell, yet we cannot altogether assent to his doctrine of their *improving* the ground as much as a summer-fallow. Most farmers confess that they are rather robbers than friends, even though kept clean of weeds; but, at the same time, it is certain that scarcely any crop more liberally repays the manure, trouble, or expence bestowed on it than potatoes. As a proof to the Hebridian that potatoe crops are not very exhausting, he may look at half the barley fields between Arran and Lewis, and he will find them to be what the people emphatically term *mathacha bhuntata*, i. e. *ground improved by potatoes*, and now under barley without any manure, and scarcely any cultivation but throwing the seed into the ground, and harrowing it in carelessly with wooden harrows.

18. *What succeeds?*—As we have just stated, barley almost always succeeds potatoes on the islands where that grain is raised in considerable quantities. In Mull and Skye, oats usually succeed for three years (or perhaps for 10) unremittingly, and with very little manure, until the ground is reduced to a *caput mortuum*, and left for six or seven years to recruit its vegetative energies for

a new crop of potatoes, and for a renewal and repetition of the old detestable treatment.

The rotation on the general run of soils in the Western Isles should however be, (as we have already recommended,) after potatoes either barley or oats, with grass seeds, and by no means two white crops successively. In Islay, Gigha, and Collonsay, this rule is pretty generally followed; only that in Islay flax is sometimes sown after potatoes on moist lands.

Having dwelt so long on the culture of potatoes, and suggested what appears to be the preferable means of promoting the increase of that crop in the Western Isles, we have nothing further to say, but merely to recommend earnestly to proprietors, gentlemen, and farmers of every description, to encourage their dependants in prosecuting this husbandry. It requires no further stock than a caschrom at 2s. 6d. liberty of carrying from the sea shore in winter a few parcels of sea-weeds, and two acres of peat moss not worth 1s. of rent, to enable an industrious man to feed himself, his wife, three or four children, and a cow, for every one of twenty years after the expiry of the first. That first year will, indeed, cost his employer or master some shillings for potatoe-seed, and some meal in the interim, which the occupant can easily pay in labour. At the end of 20 years, the land will be worth a guinea an acre, and thus the proprietor will possess two acres worth L. 2. 2s. per annum of rent, or at 30 years purchase, worth L. 63, instead of his old moor at 1s. of rent, or L. 1. 10s. in fee-simple. Many thousand acres in the Hebrides might undergo this change, and many

thousands of the natives would bless those who should accomplish it *.

SECTION XV.—CLOVER. (RED †.)

WHITE and red clover are indigenous over all the Hebrides. They grow spontaneously near the sea shore, from sandy or mossy soil indiscriminately, and on the sides of the mountains wherever any calcareous matter chances to be spread. Natural as it would therefore be to promote the culture of this crop, very little has hitherto been attempted, and almost all the Hebrides possess no more clover than what nature herself voluntarily confers. Liberal, but not lavish, is her bounty; and the Hebrides, neglecting that bounty, suffer most severely for their inattention to her injunctions. No crop, excepting potatoes and turnips, ought to be so generally attended to as clovers and other sown grasses;
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* For the truth of this assertion, we appeal to facts as they appear this season at Bowmore in Islay, near Tobermory in Mull, Lochmaddy in North Uist, and Stornoway in Lewis.

† *Trifolium Pratense*.—LINN.

for abundance of these would not only save thousands of cattle which annually perish from want of winter food, but also save and increase the grain crops of the inhabitants, and supersede the necessity of importing 20,000 bolls of meal yearly into the isles.

It has lately been stated in a public address to the Board of Agriculture, and with justice, that clover and turnips have proved of such importance to Britain, that they would have been cheaply purchased, were that necessary, at the price of an hundred millions Sterling*.

In 1708, grass seeds, and among others those of clover, were sown for the first time in our kingdom, in East Lothian, and thence soon spread over the southern and eastern parts of Scotland. It was *fifty-three* years afterwards that the practice of sowing clover found its way into the Hebrides: so slow is the progress of some important improvements, and so scanty and precarious was the communication between the lowlands and these isles until of late years!! In 1761, in Islay, was the first field of clover sown in the Western Isles. From Islay the practice found its way to Tyree and other islands gradually, and is now pretty well *understood* by all the first-rate proprietors and farmers. Yet it is doubtful if 500 acres of sown clover can now be shown on all the isles taken together. This is owing to the want of inclosures, and of that systema-

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* *Vid.* Mr Young's Address to the Board of Agriculture, May 26. 1809, p. 58.

tic regular rotation in cropping, which cannot be carried on without them.

In sowing clover seeds in the Hebrides, attention must be paid to various circumstances which are not of such essential consequence elsewhere. Of these we shall specify some, and leave others to the discretion of the farmer; because they admit of so many modifications, that it would be extremely difficult to fix any general rules.

1. Clover, being difficult to dry and to harvest, must not be sown alone, but have a large mixture of rye-grass, or other stronger grasses, along with it. The proportions we shall advert to afterwards.

2. There must be some dry spots or eminences adjoining the clover fields, for dispatch and convenience in drying the crop. This accommodation is of vast importance; and ought in no case to be overlooked. Many fields of natural and sown grasses are lost from not adverting to it; and however insignificant the hint may appear to a South Briton, who enjoys double the quantity of sun annually which gladdens an Hebridian of the larger isles, yet we can from experience attest its importance.

3. Clover should never be sown in any field on which it is likely that the crop with which it is mixed shall be laid down, or, as it is commonly called, *lodged*, either by the force of winds, or in consequence of its own luxuriance. Want of a free circulation of air infallibly kills all clovers.

4. The field must be dry, and the soil free, and in good tilth.

5. All ground that answers well for barley, will also answer for clover.

6. Although we have rarely met with clover sown along with flax in the Hebrides, yet we have no hesitation in recommending a practice which is peculiarly adapted to the Hebridian climate and soil, and which we have seen generally successful in some districts of Scotland, and in Sweden and Denmark in nearly the same latitude, but in more unfavourable circumstances.

1. *With what crops sown.*—Clover is sown with barley, flax, and oats, but chiefly with the former. This crop ought, however, to be frequently raised with flax in the Hebrides, for very obvious reasons. The great objection to the cultivation of flax is, that it yields no straw, and that such crop is particularly injurious in a district where rearing of cattle is the leading branch of husbandry. Now, if clover and other grasses were sown with flax, it is obvious that the objection would in a great measure be removed; for the land would lose very little time in yielding its due proportion of green food or provender; and the growth of chick-weed, the common complaint against flax fields, would be obviated. Nor would clover injure the growth of the flax. Land destined for that crop is always in good tilth and good heart; flax does not tiller at the root, but grows in single stems, consequently it will neither hurt clover, nor will clover prove any obstruction to its vigorous growth. Clover sown with flax would be a ready relief for sheep and young stock, as early as the beginning of May, a period peculiarly important to the grazing districts of those islands. It

ought, therefore, to be recommended to the lower classes always to sow clover with their flax, and never to take a white crop, as is frequently done at present, immediately after a flax one.

2. *Manuring*.—Clover, both white and red, is so natural to the Hebrides, that any manure laid upon the ground will make that kind of herbage immediately to start up. This is however more remarkably the case with all calcareous substances. Either lime, marl, shell sand, or sea-sleech, spread upon the moors or the sandy districts, awaken indiscriminately the latent energies of the ground; and clover, which seems to have lain dormant since the creation, immediately grows up, vigorous and abundant. If this *natural* clover (as we often express ourselves in order to distinguish it from the sown or *artificial* kind,) is the first Hebridian production after a change effected merely by casting manure upon the ground, may we not conclude that the soil is particularly adapted to bringing that crop to the highest state of perfection by cultivation? Would not a proper attention to this subject bring a supply of clover many weeks earlier to the relief of the Hebrides than their present neglect of it, and the circumstance of leaving it to the course of nature, allow? And is not the extensive cultivation of clover, too, suggested by the species of manures, namely, the saline and calcareous, in which these islands abound?

3. *Seed*.—Where clover is sown in the Hebrides, it is always mixed with rye-grass, and sometimes with white or yellow clovers; though the last mentioned are not
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not great favourites, excepting when land is intended for pasturage, not for hay. The usual quantity sown is from 12 to 15 pounds of red clover, and 2 bushels or nearly 5 pecks of rye-grass per acre, and the produce varie from 180 to 280 stone of hay. The quantity of clover to be sown, for the purpose of cutting early in summer for feeding young stock, should, however, be sown much thicker than what is intended to be mown for hay in the month of July. Each acre of this description may receive 20 or even 22 pounds of red clover, which will be the finer the thicker it is sown. So congenial to the soil is this sort of grass, and so favourable to it is the climate of the *Lebrides*, that we have not found a single instance of a failure of crop, where there was not some gross mismanagement on the part of the cultivator. The want of a proper selection of seed is the most frequent kind of mismanagement. Seed should always be plump, purple-coloured, and fresh. When it has a reddish tinge, and is shrivelled, there is danger of its having been damaged in the harvesting. Great care must be paid to the choice and quantity of seed, and few who bestow that care, will have cause to regret the trouble which it costs them.

4. *Time*.—Clover seeds are sown 10 or 11 days after barley, and harrowed into the ground with wooden harrows, furnished with short teeth, and sometimes rolled so as to consolidate and level the surface of the soil. Towards the end of May the following year, some early spots are cut for feeding horses, young cattle, or sheep, and the first or second week of July generally

generally ushers in the regular hay harvest. What a difference of time between this artificial harvest, and the natural one, common to all hay making in the unimproved and backward isles? In those no hay is cut until the latter end of September, or perhaps the middle of October, the most rainy season of the year. Half the quantity is frequently lost, and what is said to be saved is often so much damaged by bad weather and unskilful treatment, that it affords little nourishment, and occasions numerous and very serious distempers. There is indeed nothing which ought more generally to be attended to than *earliness* in every species of crop; but in clovers, which are by no means easy to secure in an undamaged state if left to an advanced period of harvest, this is more peculiarly the case; and we would therefore, both from analogy and personal experience, recommend to all farmers in the Western Isles to have their grass seeds in the ground before the 20th of May.

5. *Use.*—Clover, being a biennial plant, generally dies away from the field in which it is sown the third year, or even the second year, if it be allowed to ripen its seeds before cutting or depasturing. This, however, should on no account be permitted. The crop ought to be cut when in early flower, before the seeds ripen; and when it is meant for pasture, cattle or sheep should be successively admitted, so as to prevent, by all means, the deterioration of the grass and the impoverishment of the soil, which never fail to result from the ripening of the seed. The uses to which clover is applied are so obvious, that we need not dwell
upon

upon them here. The common Hebridians have an erroneous idea, that sheep will not eat clover or any other species of hay; and, accordingly, they entrust them in winter to the scanty pickings which the half starved creatures can procure for themselves. Many thousands die in consequence, and all are greatly reduced in value and in strength. It is perhaps in some measure to be regretted, that no sheep stocks suit the improved isles of Islay, Gigha, and Collonsay, and that the enlightened proprietors of these islands cannot therefore set the example of applying clover to the important use of sheep-feeding and fattening, which they would otherwise exhibit.

1. *Mown*.—Clover and other grasses are mown in the Hebrides with common scythes by the farm labourers, and either given green to horses and cattle at the time, or preserved for winter food, and harvested as hay is in other districts of Scotland.

2. *Fed*.—Clover is very generally fed off the land by cattle and young stock, and too often in a very uneconomical and injudicious manner. Cows are permitted in all weathers to pasture in clover fields, (natural or artificial,) without much attention either to the damage done to the crop by their trampling it down, or to the risk which they themselves run from swallowing too large quantities of that sweet herbage, and from its swelling in their stomachs *. In most cases, however,
clover

* To prevent accidents of this kind, care should be taken to put cattle into the intended clover pasture only when the field

clover should be cut rather than fed off, at least the first season after sowing; and also in meadows of good wild clover. The second and third years may admit of their being depastured.

3. *Soiled*.—The practice of soiling cattle of any description is unknown, or at least hitherto untried in the Hebrides, either with clover or any other sort of grass. It is, indeed, likely, that where the climate is so mild, where land is so cheap, and where manures are so much neglected, the practice will not speedily be adopted; and therefore we need not here enter upon any details concerning its usefulness in the more opulent and advanced districts of Great Britain. It is generally admitted that one-third of the grass of a field is saved by soiling, and that the quantity and quality of dung will usually be as three to two upon a farm where half the cattle and horses are regularly soiled or fed in the house.

4. *Seeded*.—All the clover seeds sown are imported. It is indeed an unprofitable sort of management to attempt saving seed on light soils, which, as we have frequently

field is dry, towards the middle of the day, or after the cattle have fed for some time previously on unsown grasses, and the edge of their hunger is somewhat blunted. Having once or twice adopted this precaution, we have seldom had any cattle *hore*, (as it is called in Yorkshire,) and no bad consequences have followed even from the fullest bite of the finest clovers.

frequently remarked, must always be greatly exhausted by any species of crop allowed to ripen and run into seed.

5. *White Clover* *.—This species abounds in the sandy districts of the Hebrides, but has not been cultivated to any extent. It is neither reckoned to be so vigorous or prolific as the red clover, but has been successfully mixed with rye-grass and red clover, in the proportion of nearly one-third of the latter, especially on lands intended for two or three years pasturage.

6. *Is the land tired of clover?*—This question has never occurred to an Hebridian in his own country; and, indeed, he is disposed to doubt very much whether it be not an apology for mismanagement rather than a fair objection to the generosity of mother earth. Land will tire, *i. e.* it will yield poor crops of every conceivable species if these are continued in succession, or raised too often in a short time, and therefore unskilfully; but that land should tire of a meliorating crop, such as clover, taken in due rotation, while at the same time full justice is done to that land, both by draining, manuring, and tillage, is extremely improbable and unnatural.

Our experience on this subject coincides entirely with the opinion of the reporter of Leicestershire, viz. "Land tired of clover is too often exhausted by tillage, and laid down

* *Trifolium repens*. LINN.

down in an unimproved state, and will seldom occur if a good liming be given at the end of a tillage, and the land be laid down clean; if the seeds should by chance fail, the remedy is to plough up the stubble and sow vetches, followed by a green crop, manured for, and then sow barley and seeds again *."

We conclude the section of clover, by earnestly requesting all Hebridian landlords and farmers to cultivate this crop with assiduity and perseverance. The soil and climate are admirably calculated for it. By cultivation, it will be both greatly more abundant, and at least two months earlier for their cattle than it can be found in the best natural meadows. It is a meliorating crop, preparing the ground for white crops, by enriching and cleaning it. No species of herbage is more grateful to cattle, or proves more wholesome for every kind of stock; and what is peculiarly useful in the Hebrides, early clover may be raised and given to young or weak stock from the first week of May till they gain strength in June and July, a period in which grain, potatoes, and all other resources usually fail.

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* Vid. Rep. of Leicestershire, p. 137-8.

SECTION XVI.—RAY, OR RYE-GRASS*.

UNTIL various improvements, not yet generally known, shall have been introduced into the Hebrides, we cannot recommend a large variety of crops, or even expect the most scientific and masterly modes of raising them. This were a mockery of the true condition and interests of these districts. Whatever varieties of herbage may therefore be suitable to other portions of our kingdom, and whatever artificial means of improving and of securing them may be followed with advantage, we apprehend it to be the interest of Hebridian farmers, in the first instance, to direct their particular attention to the cultivation of rye-grass and clovers.

The great objection to rye-grass is, that it is understood to impoverish the soil, and that it grows thinly and irregularly in detached patches, and not uniformly like other crops.

It cannot be denied that this frequently happens; but the fault is imputable to the cultivator, not to the rye-grass. Like all crops which, growing in single stems and ripening their seeds at the same time that their roots decay, rye-grass, if not cut or eaten off before that period, will most unquestionably and most powerfully exhaust the soil, and soon die away itself
from

* *Solium perenne*, *Linn.*

from the field *. But if it be cut before the seeds are formed, it will vegetate again at the root, and it will improve instead of impoverishing the soil. A first and second crop of rye-grass may be cut the same season, each time before the plant flowers; and both the ground and after grass for pasture will be the better of it; whereas they will be essentially injured, if the seeds be permitted to ripen.

Rye-grass, abounding more in stalks than in foliage, is better adapted for a hay than a pasture-crop. Every pasture is in perfection when the flower-stalks have just begun to spindle *, and are not so high as the leaves. Rye-grass is in this state only for nine or ten days, and very early in the season. It answers, however, well for cutting after this period; for although the stalks and spikes are shot forth, cattle will willingly eat them in the stall in winter, though they neglect them during the season of plenty in the field.

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* The best Roman writers on agriculture recommend the early mowing of rye-grass, which they call by way of eminence *hay*; Cato directs that it be cut before the seed ripens, and his words are very strong on the subject. "Fœnum, ubi tempus erit, secato, cavetoque ne cæro seces. Priusquam semen maturum fiat, secato," &c.: i. e. Cut hay, (rye-grass) with your earliest conveniency, and beware of cutting it *late*; cut it before the seeds ripen, &c. Cat. cap. liii.

Varro and Columella give similar advice. Vid. Varr. lib. i. cap. xlix. and Colum. lib. ii. c. xix.

† Vid. Walker's *Hebrides*, *passim*.

With regard to its growing sparsely and irregularly over the surface in which it is sown, this often happens from the inattention of the sower. The seeds must be carefully mixed with those of the clover sown along with it, and they must be fresh, vigorous, and of good quality.

Rye-grass has many excellent properties to recommend the cultivation of it in the Hebrides. We need specify only a few of the most prominent.

1. It is a native plant, and consequently hardy, and capable of withstanding every vicissitude of our precarious climate.

2. It is very early, being fit for pasture about the second week of May, for hay about the middle or end of June, the driest season of the year; and may be cut for a second crop of hay towards the middle and latter end of August, before the rains commence.

3 Rye-grass, being a strong solid plant, has an immense advantage over other grasses in facility of harvesting. It resists rain, after being cut, more effectually than any other sort of herbage, and loses little of its weight or substance, if managed with a tolerable share of industry and attention. A Scot's acre has been known to produce 310 stone of rye-grass in the island of Gigha, a quantity superior in the cumulo of nourishment to that of any other grass hitherto cultivated in these isles.

The duration of rye grass is two years, though complaints have lately been spread of its disappearing on many fields the second year after being sown. It is certainly not a good crop for land intended for pasturage during a considerable number of seasons in succes-

sion, and therefore ought to be chiefly raised as a *hay crop*.

The management, and all the details which we have given respecting clover, apply also to rye-grass, with which it is always sown; and, as we think, ought always to be sown in the Highlands and Western Isles of Scotland. The quantity of seed per acre, ought to be from two to three bushels; though, in consequence of the high price of seeds, only two or three pecks, or a bushel and a half, are usually allowed. The thicker it is sown, below three bushels and a half, the finer and more valuable is the grass.

In Styria and Carinthia, and some highland districts of Upper Austria, where the climate resembles that of the Western Isles, being very rainy and precarious, every possible attention is paid to the hay crop in the months of July and August. It is scarcely at all exposed to the sun, which would, as the natives believe, injure the quality of the hay by taking away its colour and juice, but carried, as soon as it is cut, into shades or hay-houses with open ends, upon posts or pillars, and sometimes open sides, but well thatched above with wooden or earthen tiles or slates. There they hang the bundles, somewhat of the size of the Scotch oat-sheaf, upon pegs, suspended along the side walls or roof in every direction within the hay house; and, without any further trouble, the hay is dried and laid up for winter use in the space of 10 or 12 days after mowing. There is, it is true, one great impediment in the way of adopting this plan in the Hebrides, namely, the scarcity of wood, and difficulty of suspending the sheaves of hay above the floors of any shades
that

that might be erected on the Styrian plan. This obstacle, however, might be in part removed by using ropes instead of wooden pegs, as we have seen in some provinces of Sweden. Such ropes, made of heather, hemp, bent-grass, or rushes and sprigs, might hang from side to side of the roof and pillars of the hay-house, during the time of hay harvesting, and might afterwards be applied to other agricultural purposes. The trouble and expence of making them would indeed be considerable, but it would, in most cases, especially in the more rainy districts, amply compensate the farmer's labour, by securing his whole hay crop in good order, and early in the season. The Hebridian has one great advantage over the native of the continent, in cultivating clover and rye-grass, and that is, the mildness of his winter. The cold is never so intense as to kill those plants, a circumstance very frequent and fatal to them in other countries. What he wants most is a sufficient *quantity* of hay, and at an *early* period of the year. This can be obtained only by sowing grass seeds in a judicious manner, and by paying great attention to the time of mowing and harvesting the crop. Nothing demands the serious consideration of landed proprietors and farmers in the Hebrides more than these objects, which, unfortunately, have hitherto been almost uniformly neglected.

Neither Sainfoin, Lucerne, Chicory, Burnet, nor Hops are cultivated in the Western Isles; nor do we
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suppose

suppose that the cultivation of any of them will soon be attempted. As already stated, rye-grass and clovers are the cultivated herbage best adapted to the climate and soil; and ought therefore, in the first instance, to be extensively propagated through these islands, before other hay crops commence.

SECTION XVII.—HEMP.

Mr CAMPBELL of Shawfield's fine farm in Islay, near Islay House, presented to view one of the best crops of hemp which we have seen in any country. It was in drills about 32 inches asunder; and the male plants were in general 5½, the female 8 feet high. Excepting a small district in Courland, near the town of Mitau, no other ground exhibited a similar crop; nor do we believe that hemp is cultivated in that way in any other part of Europe in considerable quantities.

The next place in which this crop met us, was a small tenant's possession in South Uist, where we little expected any such phenomenon. Here too, though soil and cultivation seemed to be equally poor, the plants were vigorous, and about five feet at an average above the ground. They seemed fully equal to the general run of Livonian crops, and to all appearance promised as good returns as any other crop on these lands. They stood in a belt nearly six feet broad, around a cabbage field. The owner gave as the reason,

son, that hemp effectually guards cabbages and every sort of pulse against caterpillars and all vermin, and that he found it uniformly a complete protection for his garden in that respect. On conversing farther with him, he not only persisted in this assertion, but also enlarged upon many other advantages of hemp culture. It cleaned the ground better than any crop he had ever tried :—It dried moist clayey sand, or loam and sand, in which it grew, better than barley or oats :—It required less attention than flax, and turned out to him to as good account at least as flax did to his neighbours :—He seldom wanted it, but had every season a small patch in some part of his land, generally around his garden or cabbage yard, where it grew year after year, without degenerating, although he manured the soil only once in two years, and that no more than he found usually necessary to give his barley crops. He sowed it in May and plucked it in September, or late in August. The quantity of seed which he gave was very small, nearly, as far as we could guess, at the rate of eight pecks an acre. He imagined the male and female plants to be different species of hemp ; but his experience led him to pluck the male five or six weeks earlier than the female, the former being sooner ripe than the latter. The rest of his management was awkward and unskilful. He, however, made ropes and sacking of his hemp, and saved himself a great expence to which he would otherwise be liable in cordage for his boat. Hemp occurred only in three or four other places in the Hebrides, and in so small quantities, and so ill managed, that we cannot regard it as hitherto constituting an Hebridian crop.

It is astonishing that so little attention has been paid to the cultivation of hemp in our British island, considering the immense demand for the articles of which it forms the material, and the absolute necessity of our being always supplied with them in abundance. On this supply our power as a nation, our honour, independence, and even our existence depend. The precariousness of our intercourse with the countries in which this plant is extensively raised, is such, of late years, as to rouse patriotic persons in our kingdom at length to commence hemp cultivation; and, among these, Mr Campbell of Shawfield, ever attentive to what promises advantage to his tenants and his country, now sets a salutary example: That example is on his own lands on the Hebrides. We trust that others will follow it; and that our monarchy shall not be under the necessity of purchasing from jealous or hostile powers on the continent, or in America, at the price which they may choose to impose, the means of our security and the sinews of our strength. We shall then not only save *five millions* sterling per annum to our country, but reduce the influence of our rivals and our enemies in proportion as we augment our own.

The climate, and much of the soil of the Western Islands, are well calculated for the cultivation of hemp. The manures, whether saline or calcareous, in which they abound, are the best possible for this crop; and, as little or no weeding is necessary, the summer season will not be broken in upon by the operations, which can be dispensed with by hemp, and consequently devoted to green crops and to other necessary purposes. From the period of sowing the seed early in May, till
the

the latter end of August, the farmer need not look at his hemp field; and even afterwards, as we shall presently perceive, his task will not be very arduous.

1. *Soil*.—Hemp delights in a deep* free soil, and whether sandy, clayey, gravelly, or mossy†, is of no consequence. We find it thrive in all these, if properly managed; and, what is perhaps peculiar to it, the same field will bear repeated croppings of hemp in succession, provided the seed be renewed and the land be well manured.

2. *Tillage*.—The fibres run deeply into the ground in order to support and nourish so tall a stalk, and therefore the ploughing must be at least five or six inches deep, and the tilth must be fine. This will be no difficult matter in the Hebrides. Two ploughings will in general suffice. The harrow must be used without scruple, until no clod of the size of a goose-egg is seen on the field. No place must be left for water to lodge on the surface, and to kill the seed.

3. *Manure*.—Lime, marl, sea-weeds, shell-sand, and dung, may be used for hemp in such quantities as the experience of the cultivator of the same soil dictates for barley or flax. It is impossible to specify the quantity which an acre requires; but we may safely aver, that

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* *Cinnabisi solum pingue, stercoratumque et rigrum, vel planum atque humidum, et altè subactum, deposcit.*—Colum. lib. ii. c. x. i. e. Hemp requires a deep, richly manured, moist soil, and deep ploughing.

Vid. Agricult. Report of Staffordshire, p. 83.

land under hemp is more seldom injured by *over-maturing* than that under any other crop.

4. *Seed*.—Riga and Narva, whence the greater proportion of our hemp seed has always been imported, are still famous for affording the best seed. Twelve or fourteen pecks will sow an acre broad cast, and nine pecks an acre drilled. The seed must be speedily covered with soil after sowing, two or three inches deep, otherwise birds will greedily devour it. The land should be rolled after the seed harrowing.

5. *Sowing*.—The labourer must be particularly careful to use every possible means for sowing his hemp seed regularly and equably over the field. In order to do so, he will find it necessary, when sowing broadcast, to return upon his steps, always sowing to the right and left, and to throw the seed no farther than four or five feet from him, as he paces slowly along the furrow. In this, however, as in many other minute parts of agricultural process, his own discretion will guide him more effectually than any written advice.

6. *Time*.—Some persons idly imagine, that our climate is unsuitable for flax and hemp, because the extremes of heat and cold are not so intense, nor vegetation so rapid in the summer months as in the corresponding latitudes of the continents of Europe and America. Experience proves the contrary. Hemp and flax grow in Ireland and in the Danish Isles as well as in Livonia, Poland, or Canada; and, as we have already mentioned, the island of Islay displayed as fine hemp this
season.

season as any which we have seen even in Russia. Nor, indeed can we conceive why a climate and soil that produce other crops usually raised both in the hemp countries and our own, such as barley, oats, rye, &c. should not be equally favourable to flax and hemp here as they are there. As experience proves the fact suggested by analogy and by reason, we need not be discouraged by any circumstances connected with the object more immediately under review. The *time* differs, and must differ, in Russia and the Western Isles. The Russian peasant's field is locked in solid ice till the beginning of May, and he cannot sow hemp or any thing else until that month be considerably advanced. But although he does not sow till perhaps the first week of June, such is the power of vegetation, bursting at once from a frost of eight months into the heat of the torrid zone, that he can pull his crop of hemp or of flax, as he cuts his barley or rye, in the end of July or very early in August.

The Hebridian, on the contrary, has scarcely any frost at all, and snow never interferes materially with his winter's employments. He can have his hemp field ready in April, sow towards the end of that month, and his summer is usually warm enough to admit of his hemp and flax harvest commencing in the month of August, or early in September. In these respects he stands, to the Russian cultivator of the soil, with respect to hemp, precisely as he does with regard to other white crops. They may be equally good, although they take different *times* in both countries*.

Male

* *Vu.* Corps d'Observations de la Société d'Agriculture, de Commerce, et des Arts, établie par les Etats de Bretagne, p. 137—145.

Male and female plants are ripe at different periods, the variation between them being 5 or 6 weeks; it is necessary, therefore, to pay particular attention to treating the one sex tenderly while the other is pulling. This can of course be more easily done when the hemp is sown in drills, which is a strong recommendation for adopting that mode.

Although the *distinction of sexes* in hemp has always been palpable and acknowledged, yet writers have very frequently confounded them. Their names however are of no consequence. That stalk which produces a flower, but no seed, and is ripe 5 or 6 weeks earlier than the stalk which bears seed, is now commonly called the male hemp, the other the female. Both require precisely the same treatment; only that the male is pulled when the flower begins to fade, and the female when the stalk shews a yellowish or pale tinge. Both of them suffer infinitely more by being too late than too early pulled.

7. Pulling and tying.—Hemp must be carefully pulled with the hand. The coarser stalks should be kept separate from the finer, and both be tied in bundles of *ten or twelve* handfuls each. The stalks must not be crushed or broken. In order to preserve them whole, it will be necessary, especially when the crop is luxuriant, to tie the bundles with strings* in the *middle* and at *each end*, or at least with *two* different strings.

The pulling of an acre costs from L. 1. 5s. to L. 1. 10s. according to circumstance. When the ground admits

* These strings may be of dried rushes, or of some similar plants very common in the Hebrides.

mits of it, the sheaves or bundles may be placed nearly erect, or leaning against a wall or dyke, so as to dry as speedily as possible. Immediately after pulling and drying, the leaves, seeds, and branches, are taken off the stalks with a ripple; always taking care to injure them as little as possible. The bundles are then tied as before, and consigned to the steeping-pond.

8. *Watering*.—Pits are dug in some low lying parts of the field, or a natural pond, or a rivulet dammed up, serve the purpose of watering, according to the farmer's convenience. The water must be stagnant. It must have no communication with fish-ponds, or valuable rivers of small size, otherwise their fish will perish. The bundles or sheaves of hemp must not be *pressed* against the bottom of the pond, nor must any part of them be above water. They ought to float easily between the bottom and the surface, which is a thing not difficult to manage.

The *time* requisite for watering is different, according to the quality of the hemp, and the nature of the water, and of the weather. Ten or eleven days usually suffice; but the best test is, when the rind or hemp easily separates from the heart, stalk, or boon. It is better to give too little than too much watering, because any deficiency may be remedied by the grassing; but rottenness and other bad consequences might follow from keeping the hemp too long in the watering-pond.

9. *Grassing*.—It is of great importance to choose a piece of ground for this purpose, which has a clean sward

sward of grass, is not liable to, whirlwinds, and which is never overflowed with water. The sooner the operation is over, so as to separate the rind from the boon, the better. Many hemp farmers neither water nor grass this crop the same season in which it is pulled; but keep it in dry barns or other proper repositories, until the following autumn. It is doubtful which plan ought to be preferred. A favourable season ought unquestionably to be seized; and, delay in this, as in all other agricultural tasks, is, if possible, to be avoided. Grassing is superfluous for such hemp as is meant for ropes or coarse manufacture of any kind; and is practised, accordingly, very seldom in Russia and Poland. There it is dried immediately after the watering, and laid up to *sweat*, (as the natives call it,) for about six or seven weeks, that it may work the more easily.

10. *Binding*.—The only object of binding after grassing being to dry the hemp for the purpose of *breaking*, the size of the bundles must suit the state of the weather, and the circumstances of the farmer or operator. Some people, in moist weather, dry hemp in the house, by means of fire; and, on that account, bind it in small and easily managed sheaves, which they suspend on ropes or poles contiguous to their fire place. Great care is here necessary, to prevent the hemp from being scorched or becoming too brittle; and, upon the whole, this firing plan is not to be recommended, excepting in cases of necessity.

11. *Breaking*.—This operation is familiar to every one who has seen any thing of the management of flax
or

or hemp. The only thing particularly to be avoided is, the cutting or tearing the hemp with the break-machine. This will be avoided by frequent turnings and shiftings of the sheaves or beets.

12. *Price broken.*—Hemp is so seldom sold in the Hebrides, or rather indeed so seldom known as an article of commerce, in any stage of its progress from the period of sowing to that of using it in cordage and for similar purposes, that we can mention nothing certain on this head.

13. *Bunching and Heckling.*—These depend upon the uses to which hemp is meant to be applied. The most ordinary large toothed heckle, *once* used, is sufficient for the coarsest hemp, which is intended for ropes or large netting. But such hemp as is meant for fine sail-cloth or linen, will require two or three hecklings, and proportionable bunching, according to the discretion and convenience of the workmen. The following directions for heckling, are given by the learned and ingenious Maxwell of Arkland, who seemed to have paid much attention to the cultivation of hemp. “If you design hemp for gross or coarse yarn, you need not heckle it, in that case, but with a large toothed heckle. If you design it for finer uses, you must begin with your coarse heckle, and heckle it again in the second heckle. If you would have your hemp brought to be yet finer, you must heckle it a third time, and in a finer heckle. You must always work hemp gradually, and not heckle it at first with your finer or finest heckle; for, if you do,

do, you must expect more *tow* than hemp fit for use and service. When you have a mind to have it extraordinary fine, you must not in the least heckle it ; but you must work it entirely by the help of a brush for that purpose, made of hog's bristles, and stiffened artificially with glue. This brushing does not so wear and tear it as the heckles do, but by easy degrees separates the threads and fibres thereof. A brush will last many years if well and carefully used.

"Hemp requires heckles with longer and larger teeth than flax does. If you design your hemp for sail-cloth, two hecklings will suffice, and those hecklings are to be in the first and second large heckles," &c *.

14. *Price Heckled.*—The price of good hemp has this year (1808–1809,) amounted to L. 136 Sterling per ton of 20 cwts. each cwt. of 112 lbs. at different periods, and has fluctuated between L. 110 and L. 125 during the whole season. Supposing we assume L. 120 as the medium price ; we shall perceive very powerful inducements indeed to the cultivation of this plant.

A ton of hemp is 20 cwts. each of 112 pounds of 17½ ounces, or 2240 pounds, or 128 stone weight. Now an acre of tolerable land will produce 32 stone weight of hemp, consequently 4 acres will produce one ton. The value of the gross produce of an acre is accordingly 1¼^s or L. 30 Sterling. The expence is
L. 1. 16s.

* Vid. Select transactions, p. 363–364.

L. 1. 16s. less than that of flax, (for hemp needs no weeding,) and cannot reasonably be estimated at more than L. 16. 13s. per acre*; so that the clear profit will amount to L. 13. 7s. A profit so considerable, that we trust many farmers in the Hebrides will be persuaded frequently to realize it.

15. *Spinning—Earnings.*—The advantage of affording employment to men, women, and children in winter, ought to induce Hebridian proprietors more powerfully than any others in Britain to encourage the cultivation of hemp. A woman can earn 6 pence a day, and a girl of 12 or 13 years of age 4 pence, during the months of November, December, January, and February; and allowing them to work only five days in the week for these four months, or 17 weeks, grown up women will earn L. 2. 2s. 6d. and girls L. 1. 8s. 4d. each, during a period usually passed in a state of listlessness and torpor.

Were roperies commenced, and men and boys regularly employed in manufacturing ropes and cables, &c. the advantage to the Hebrides would be very great; so great indeed, that persons unacquainted with the maritime state of this district will not easily believe it. Every active man would clear L. 10. and every boy L. 4. during their days of confinement in the stormy seasons of the year, even although they should pursue their usual avocations in spring, summer, and autumn.

It would be easy to give the *data* which form the ground of this assertion, but they can only be understood by an Hebridian, who knows the demand for cordage

* Vid. p. 136, Art. Expences and profit.

cordage in these isles, as well as the vast proportion of time lost in winter, and in stormy weather, by the great mass of the population. In no other part of our empire, is the species of manufacture alluded to so necessary, and in none would it prove so profitable. Many lives are lost every year, merely owing to bad or scanty cordage; and many thousand natives spend a large portion of the winter and spring months in total inactivity, who, with proper management, and especially by the introduction of hemp manufacture and husbandry, would enrich themselves individually, and greatly benefit their country.

Our government wisely encourages the cultivation of hemp, both by bounties, and by a considerable duty upon what is furnished by foreign countries. The bounties fluctuate occasionally, and are likely to be soon augmented, should our present precariousness of foreign relations continue for any time; but the import duty is so heavy, that the British farmer derives from it alone a sufficient motive for the extensive culture of this important article. The old duty was L. 2. 4s. per cwt. of dressed hemp; but since the 10th of June last, it amounts to L. 4. 4s.* war-duty included, per cwt. or L. 84. per ton!—a sum double the usual price of dressed hemp in London, in time of peace.

16.

* Vid. An act for repealing the several duties of customs chargeable in Great Britain, and for granting other duties in lieu thereof,—10th June 1809.

16. *Repetition on the same spot.*—The well ascertained fact of hemp growing in many farms in Ireland, Russia, Poland, Canada, and the north of France, without any perceptible degeneracy in the crop, or deterioration of the soil, for a dozen or 20 years successively, is the best argument against those persons who arraign this plant as a scourger of the ground. It requires, indeed, strong land, as well as plentiful manure, to produce, in succession, good crops of hemp from the same field: But the thing is uniformly done in the countries most famous for its cultivation; and that too by the most successful farmers. They are impelled to this *repeating* system, no doubt, as well by the facilities afforded by watering-pits, and other accommodations *once constructed*, as by the circumstance of the plants being naturally disposed to thrive on the same spot for a succession of seasons. These facilities are indeed very important to the farmer, and must be taken into view in all his calculations. Hemp or flax boors are unknown among us, though common in Holland, Italy, and Flanders, who purchase the article from the farmer either upon the ground or the moment it is pulled, and whose employment, during the year, is confined to this article alone. The whole process of preparing hemp for use is equally unpleasant and tedious to the common farmer,—and this, together with the loss which usually results in consequence of want of skill or of attention, is perhaps the great cause of the general neglect of so profitable a branch of agriculture.

Hebridian proprietors, whose lands are overstocked with population, ought to attend to this circumstance,

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and endeavour to introduce upon their estates, in this branch, as well as in many others, that subdivision of labour without which no country can make any great progress in agricultural improvements.

We conclude our remarks upon hemp, by once more urging Hebridian proprietors to its cultivation. They have every inducement. Land is low rented, and, generally speaking, well adapted to this kind of crop. Calcareous and saline manures can be easily procured. The climate answers admirably. Watering ponds can be easily constructed in every field. There are abundance of people whose industry, having at present no definite object, would be most advantageously for themselves and for their country applied to the different processes which hemp requires from the moment of pulling till it is used in the loom or in cordage. Many thousand pounds would annually be spared to the Hebrides, and many lives saved by their supplying themselves with this material, for cables, ropes, netting, and sail cloth. Navigation and trade would proportionably advance. Large sums would be drawn by the farmers for their produce, and in bounties from government; and the government itself would ultimately be a great gainer by the strength, wealth, and security which would result from the prosperity of one of the most interesting districts of our empire*.

SECTION

* Should these remarks, and the recommendation for cultivating hemp in the Hebrides, appear unwarrantable to any reader, and inconsistent with the opinions of respectable and intelligent

SECTION XIX.—FLAX.

VIRGIL and COLUMELLA's anathemas against lint or flax * seem to follow this crop in the Hebrides as they

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did

intelligent men who have written reports of *other districts* of Great Britain, we can only say, that what is advanced has met with the approbation of the most skilful agriculturists in the Hebrides. It is true, we find such sentiments as the following in the report of a county (Devon) which, both by soil and climate, we would fancy might cultivate hemp to great advantage. "The culture of hemp is not known; it has been attempted at South Pool, but (*fortunately*) for want of conveniencies for preparing it for market, has been discontinued (*a*)". But as no reason is assigned for what the author deems so *fortunate*, and as his whole section upon hemp consists of the above words only, we do not hesitate to declare, that however fortunate the want of the *conveniencies* alluded to may be deemed in Devonshire, that want is a great misfortune in the Hebrides.

* Urit enim lini campum seges, *i. e.* Flax consumes the substance of a field.—*Geor.* i. l. 77.

Lini semen, nisi magnus est ejus in eâ regione quam colis proventus, et pretium proritat, serendum non est; agris enim præcipue noxium est, *i. e.* Flax must not be sown unless it bring great increase and a high price, seeing it is extremely hurtful to the soil.—*Colum.* lib. ii. cap. x.

(e) Vid. Rep. of Devon, p. 206.

did in Italy. Very little is cultivated, excepting in Islay, further than in trifling detached spots for family use; and that little is very often injudiciously managed. Yet the advantages derivable from the extensive cultivation of flax are so palpable and numerous, that the traveller cannot easily account for the disproportion between the quantities of less profitable crops and those of lint, which he so often beholds; and his wonder will be converted into regret, when he considers the situation of the district under our immediate review. Upon that situation, so particularly enjoining the raising of flax, and giving employment to women and children in winter, we shall not now enlarge. It is sufficiently well known and understood by every one in the least acquainted with these islands. Nor is it necessary to dwell upon the great intrinsic value of a lint crop per acre, or upon the incalculable profits which countries, worse adapted to it than ours, have derived from it for ages, and the laudable skill, industry, and perseverance with which they still carry it on. So completely aware is our government of all these circumstances, and so convinced at the same time by melancholy experience, of our tardiness in following the example of neighbouring nations in the flax husbandry and manufacture, that it has from time to time bestowed large bounties*, and
afforded

* The Board of Trustees for encouraging fisheries and manufactures gives a premium of one pound Sterling the acre for all ground occupied by flax, provided the acre is ascertained to produce fifteen stones of clean lint. An average crop is 30 or 32 stones per acre.

afforded every species of encouragement for the prosecution of it.

The common arguments against the propriety of extending the cultivation of flax in the Hebrides are the following: viz. 1. Flax is said to exhaust and impoverish the soil in an extraordinary degree. 2. This crop requires so much attention and labour to prepare it for use, or for the market, that common farmers cannot raise it without neglecting other and more essential branches of husbandry. 3. In Highland or Hebridian districts, a crop which yields no straw, fodder, or food, cannot be considered as eligible or judicious. 4. Flax seed is of late years extravagantly dear, and would drain those districts of more money than they can well afford to lay out. 5. The want of mills finishes and completes the inconveniency of flax husbandry, which is besides very disagreeable and unwholesome to all persons concerned in it.

We shall briefly advert to all these arguments, convinced as we are that they really have had much influence upon the agriculture of the Hebrides for many years past.

1. Does flax exhaust and impoverish the soil?

It certainly, like all white crops that ripen their seeds, and grow in long stalks, without broad leaves to draw nourishment from the atmosphere, requires more nourishment from the soil than the generality of green crops, or such as are usually called meliorating plants. But if pulled before the seeds ripen, and before the stalks decay, which ought always to be done, flax does

not exhaust the field on which it is cultivated more than a crop of barley, oats, or rye. The best proof of this fact is the excellent crops of sown grasses, of potatoes, turnips, or other green crops, which we find to grow immediately after flax. If this crop is kept clean, it leaves the soil in as good order as any white crop whatever, (hemp perhaps excepted on strong deep soils); and, therefore, upon a fair trial in any soil of tolerable quality, neither too dry nor too moist, the argument now urged against this plant will prove groundless and futile. A cursory glance at the islands of Islay and Lismore will confirm this observation.

2. Does flax require so much care and attention as to make its cultivation more burdensome than profitable to the tenant?

If the land is free, sandy, light, or a loose loam, preparation for flax is very simple and easy. This description of soil is very frequent in the Hebrides. Pulverization, even in the completest degree, (and certainly flax requires it,) is perfectly accomplished by two ploughings and harrowings of such land. The flax seed is then sown, towards the middle or end of April, and in about three weeks afterwards, or as soon as the plants are two or three inches high above ground, women and children are employed to weed it. If this is properly executed, and it may, at the expence in the Hebrides of about a guinea per acre, no further trouble need be taken for three months. It is seldom that poles with strings drawn tight between them are necessary for supporting the head of the flax. Unless

less the season be uncommonly rainy and tempestuous, it will not lodge or lie flat on the field, nor give any trouble until the period of pulling. This last mentioned operation, which ought to commence as soon as the stalk turns a little yellowish and the branches begin to show some symptoms of decay, is carried on much in the same way with the pulling of hemp—which we have described in the last section. The same is the case with the remaining parts of the process until the flax is sent to the mill for preparing it for the heckle and the market. It cannot be denied that much attention and care are requisite during the whole of that process; but women and children can manage the crop; and their earnings may be so considerable as to give the husbandry in question an additional weight of recommendation, instead of presenting an obstacle or forming an objection against it. Without entering upon the very encouraging calculations given by the friends* of this species of husbandry, and which, like all crops recommended by any person however rational and candid, may easily be made to appear on paper highly profitable and valuable, we may state as a fact, that in the Hebrides, and especially in the island of Islay, a Scots acre of flax yields at an average 32 stones of lint, gives employment to 12 individuals for three months before it is worn as linen; and yet, although

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these

* *Vid.* Report of the British Consul in Prussia, (Mr Durno) concerning the method of cultivating flax and hemp in Prussia, Russia, and Poland; dated Berlin, 4th Nov. 1798. Farmer's Magazine, vol. i. p. 52, &c.

these 12 are well paid for their work, the farmer *clears two guineas per annum* by his crop. In short, the objection drawn from the attention and care required by flax, might have some weight in many parts of Britain, where labourers cannot be at a loss for regular employment at stated wages; but in the Hebrides, for reasons frequently mentioned, the objection not only loses its force, but also forms the best argument for the extensive cultivation of flax.

3. Should flax be neglected because it yields no straw, provender, or food?

We have already mentioned that grass seeds might, with great advantage, be sown with flax. If this plan is followed, no objection can be urged against flax more than against barley or any corn crop, further than the difference between the straw of the latter and the seed, oil, and tow of the former. The difference, in *real value*, is, as we have already seen, in favour of flax; but we maintain that the objection is altogether irrelevant and nugatory. The same might be urged against any manufacture or any branch of industry which is not *devoured as food* by an animal; and it is surely unworthy of any serious refutation. The *value* which the article carries in the district is the thing to be considered, not whether that value is obtained *to-day* in oat-cake or barley-meal, or *to-morrow* in the same commodity bought with the *price* of flax or yarn. Any crop worth L.32 per acre, at the most moderate computation, and that obtained with the expence of

L. 18.

L. 18. 9s. * leaving a profit of L. 13. 11s. to the farmer, besides giving employment to women and children in the winter months, is certainly a good one.

4. Is the difficulty of procuring flax seed so great as to prove a serious obstacle to the cultivation of this plant?

Without taking into account the quantities of seed which might be saved in the different isles, and used with advantage by mutual exchanges amidst the various districts of this extensive region, we may look upon the objection in question as a very insufficient one, when put in competition with the numerous advantages of a flax crop. Twelve or fourteen pecks will sow an acre, which, at the *very high* price of 7s. per peck, its *present* average rate in Scotland, amounts to from 86 to 96 shillings, a sum not much greater than what the seeds of any other white crop will cost †. If
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* *Vid.* Art. expence and profit, Sect. vii. page 136.

† Various political causes have combined to raise the price of flax seed to an enormous height these two or three years past. Previously to our war with Russia and Holland, and to the irritating discussions with the North American States, the price of this article was little more than one half of the sum here stated. It is, however, always to be remembered by the cultivator of flax, that the price which he will obtain for the gross produce of his field of flax, will always rise nearly in proportion to the rise of the seed sown,
and

the value of the crop on the ground is L.32, surely the expence of seed can easily be defrayed, seeing it does not much exceed one-ninth part of the produce; and the argument against the cultivation of flax, drawn from this source, falls to the ground.

5. The scarcity of mills, (or rather the total want of them,) and the unpleasantness and supposed unwholesomeness of the process of preparing flax for market, present powerful obstacles to the culture of this crop.

The society for promoting and encouraging arts and manufactures gives essential aid for building and constructing the machinery of flax mills in the Highlands and isles of Scotland, in consequence of which it is to be hoped that mills will be built in a few years on all the larger isles: and as to the unwholesomeness of the various operations connected with flax, previously to its being sold at market, it must be in a great measure fanciful and imaginary. The flax boors of Holland, Flanders, and Italy are as healthy as any portion of their fellow-subjects, and generally remarked for personal cleanliness, as well as for the comfortable accommodations and neatness of their dwellings. In the island of Islay, too, where three times more flax is prepared for

and that the demand for both will always keep pace with similar embarassments resulting from the political contingencies to which we have now alluded. *Dressed flax* in 1792 cost L. 38 per ton, in 1808 L. 147!!

for market than in all the Hebrides taken together, we were so far from remarking any appearance of unwholesome employments, or of disagreeable symptoms resulting from flax husbandry, that the persons who carry it on were (in 1808—9) evidently superior to the common run of Hebridians in outward appearance: and they are well known to be greatly superior in industry and wealth.

Having thus stated as briefly as possible the common objections to the extensive culture of flax in the Western Isles, and the answers which appear most reasonable to be made to them, we should proceed, according to the rules prescribed by the Board of Agriculture, to detail the various operations, in their order, which flax undergoes in the Hebrides, from the commencement of the preparation of the soil, for receiving the seed, to the period of heckling and spinning the article for immediate use or for the market. These operations however bear so close a resemblance to those already described in our section upon hemp, that it is superfluous to repeat them here. Nor is there any peculiarity of importance in the treatment of flax in the Hebrides, which deserves notice, as an improvement worthy of imitation in other districts. They are rather backward in this as in many other branches of agriculture, and their general modes of process and operation, if described in a report of this kind, would serve no other end than to warn others from following their example, instead of holding out a model for agricultural practice.

There are some particulars, however, in which the cultivation of hems differ from that of flax. Hemp
may

may be repeated several successive seasons on the same soil and field, provided the ground be well manured; but flax is found to answer very ill for that process. An interval of five or six years ought to be allowed the latter before repetition, and if sown after a green pulverizing crop so much the better. Flax, too, requires finer land, as well as still more complete tith, than hemp.

The watering of flax is rather more difficult and laborious than that of hemp. The latter is never, or very rarely indeed, annoyed by vermin in the pool, or pit, even should part of the crop by accident float on the surface of the water; but flax must on no account be exposed to that danger. Flax, however, possesses the advantage of being more handy and manageable than hemp, owing to its being so much shorter and more flexible, as well as smoother to the touch.

The cultivation of both ought to be carried on in districts of the Hebrides where labourers can easily be procured, and where there is abundance of cheap land of a deep, moist, moorish, or sandy and mixed loamy quality. Of this description are many parts of Bute, Islay, Lismore, Skye, North Uist, and Lewis, which might not only supply their own population with these valuable articles, but also export them to the opposite coasts of the mainland of Scotland, which are neither, in point of climate nor of soil, so well calculated as the general run of the Hebrides for the cultivation of hemp and flax.

Before concluding our remarks upon this species of husbandry and manufacture, it will be proper to mention, that we have not ventured rashly to recommend
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what has not stood the test of experiment in the district of which the report is here attempted; nor presumed, on slight grounds, to stand up as the advocates of crops which have not hitherto made any considerable progress in the best managed counties of Scotland.

With regard to the first of these remarks, namely, that the cultivation of hemp and flax has stood the test of experiment in the Hebrides, the proofs already adduced from the islands of Islay and of Uist are a tolerable evidence. Flax has been a staple crop in Islay for many years past; and a considerable proportion of the smaller tenants not only pay most of their rents with the price which they draw for their flax, but also support themselves and their families in decent competence upon the surplus. Upwards of L.7000 per annum is cleared by this island for its flax.

In Collonsay, the women and girls, who in former times spent their winters in poverty and idleness, now earn about L.2 each in flax-dressing, spinning, and weaving at an average, by their winter work, without interfering with their avocations during the rest of the year. The difference which the successful cultivation of flax has lately made in their condition and appearance, is astonishing, and worth a hundred arguments in favour of prosecuting this important department of agriculture in the Western Islands. In Skye, the Long Island, Lismore, and Mull, as well as in many of the smaller isles, the natives have, for a considerable time past, been in the habit of sowing as much lint-seed as yielded a sufficiency of flax for their own family consumption; but they went no farther. The various
operations

operations connected with it were, from unskilful management, so loathsome, and their crops all raised from the poor seed, miserably won, which grew from time immemorial on their own lands, perhaps on the very same spot successively, were so unproductive that nothing but necessity, and, we may add, the evident profit which resulted from raising flax, could have induced them to cultivate it.

We must protest against drawing any arguments unfavourable to this species of husbandry, from a supposed analogy between this extensive region and the improved counties of Scotland in their present state. On this second objection to the extensive culture of hemp and flax in the Hebrides, namely, that these crops are carried on to a very limited extent, or have of late been gradually abandoned altogether in the Lothians, Perwickshire, Fife, and the most skilfully cultivated districts in our country, as well as in most parts of England, we now venture a few plain remarks.

It strikes a superficial observer, no doubt, as conclusive against any practice in husbandry, that the experience and the personal interest of the best farmers in the kingdom have led them to forsake it; and not only to forsake it as a crop which does not sufficiently reward the cultivator by its own intrinsic value, but which even the powerful encouragement afforded by government bounties, as well as by large premiums from liberal-minded societies and public bodies, are insufficient to induce them to prosecute. Now, we must, on the other hand, observe, that the argument is here irrelevant, because the basis upon which it is founded is fallacious. Let us, for a moment, assume it as a fact, that

that flax is universally, and with sufficient propriety, banished from the rich and well managed fields of a lowland district, for instance, the county of Berwick. It will be granted that the farmer there has very good reasons for preferring his own favourite crops. His land is rented by him at L. 5 per acre. His hinds or married servants, (the preferable sort of labourers) cost him each L. 32. 18s. 6d. per annum, or in years of high prices for grain, L. 40. 8s. 6d *. His horses, carts, ploughs, harrows, and various other requisites of highly advanced husbandry, which cost immense sums, must not remain idle for an hour in the year that they can be employed advantageously on the farm; and *that* they can be at all seasons and in all weathers; for such constant and regular occupation is reduced to a regular and nicely digested system. But the various operations required by the crops under our review are inconsistent with the employment afforded to the capital in economical stock just mentioned, and with the high wages paid to servants in Berwickshire, as well as with the methodical arrangements of corn-raising, and cattle and sheep feeding and fattening, which are carried on so admirably in that county. The case is far different in the Hebrides. Land, as capable of producing a good lint crop as that of Berwickshire, (though not a wheat crop,) can be rented at 5s. instead of L. 5 an acre: A hind and his family will, instead of L. 40. 8s. 6d. cost no more than L. 16 per annum, although labour

* *Vid.* Agricultural Report of Berwickshire, by Mr Kerr, 1809, p. 415, 416.

bour by the piece is as high as any where in Europe ; field and house operations of husbandry are so desultory and irregular, and the agricultural stock in good order for effective service is comparatively so trifling, that little loss will accrue to the farm from the defalcation of labour which the flax and hemp husbandry would occasionally create. Add to these very decisive considerations, the circumstance of the cheapness of manure in the Hebrides, and the facility of grassing and watering the crops in question, and it will not appear surprising that we should recommend the raising of them in the one district, as well as the discontinuance of them in the other.

In agriculture, as well as in other branches of human industry, there are stages or degrees in advancement, at which tribes in particular situations must not only arrive, but also remain for some time nearly stationary, as if to measure and reconnoitre the ground intended for their future exertions. Did they rush on at once, they would act like boys attempting to navigate a ship of the line instead of paddling a wherry, or pretending, at the age of ten, to display their science in the workhouse of a painter or a sculptor. But these very people, however deficient in systematic energy at present, may advance *gradually* with honour and success. The men, and especially the women and children, who might now be profitably engaged in the Hebrides in the husbandry under review, cannot at once exhibit the productive industry of their more polished countrymen in the merse of Berwickshire ; but in a century hence they may advance from stage
to

to stage, and through the very channel here recommended, and by means of the wealth derived from this husbandry, prosecute various branches of agriculture now unattempted, and set that example for useful imitation to their fellow-citizens, which it is now their own interest and their honour to adopt.

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CHAPTER

CHAPTER VIII.

GRASS LAND.

SECTION I.—MEADOWS.

THOSE lands in the Hebrides which may be strictly denominated meadows, lie near the sea shore, and are overflowed by high spring-tides, or they are liable to be inundated by the adjoining lakes, rivers, or torrents. Their extent is about twenty-five thousand acres. They never undergo aration, or indeed any species of culture or improvement. All the aid which they receive from art consists in a sort of partial and very imperfect draining in spring and summer. No manure, no top-dressing, weeding, or regular irrigation is administered; and accordingly these meadows, though valuable on account of the extreme scarcity of winter provender in the district, yield not half the quantity of hay
or

or pasture, nor any thing approaching to the quality, which skilful management would make them to produce. The general average of hay upon them is about a ton and a quarter per Scots acre, or nearly 160 stones of 17½ lbs. per stone, and that of very coarse quality, frequently damaged or spoiled in harvesting, and rarely secured in the stack till the middle or end of October. The lateness of hay harvest, in consequence of this mismanagement of their natural meadows, is one of the greatest disadvantages under which the Hebrides labour; and what makes it the more serious is, that almost the whole of their cut grasses are drawn from those meadows. When it happens to rain violently for some days in the beginning of September, and when similar weather recurs about the usual time of mowing these meadows, the whole crop is totally lost, and extreme distress and ruin follow. At all seasons the hay harvest solicits the farmer's care at the same time with his potatoes, inclosures, roads, and other avocations which usher in the Hebridian winter; and the natural consequence is, that they are all wretchedly performed, and at a great expence of time and labour. All these inconveniencies might be avoided by good management in nine instances out of ten. The hay which, by reason of neglect, is thrown back to the middle of October, might be cut down, nearly ripe, towards the end of August, and before the oat harvest or potatoe-gathering commences. The isles generally enjoy fine weather till the middle of September, after which period, the farmer cannot reckon with any sort of security upon 24 successive hours of dry weather till the beginning of March. This description, it is true, does

not apply to all the Hebrides indiscriminately, some of them being low, and usually favoured with long tracts of mild and dry weather even in winter; but it holds strictly true of the greater number of the larger isles, and indeed of all of them excepting Bute, Islay, and North Uist.

It is well known, that where meadows of the description now under review are properly water-fed, they throw up a greater weight of herbage than any other land whatever; and that by top-dressing occasionally, and drying their surface of stagnant water, the quality of the herbage may be brought to as great perfection as that of any other ground. The Secretary of the Board of Agriculture in his report of Sussex mentions, "*Meadows which formerly let at 5s. the acre, now, after watering, let at 40s. and are valued at 60s.*" We have seen improvements to a similar amount prosecuted to an immense extent in Dorsetshire and Wilts.

The rents paid for meadows in the Hebrides can in no case be ascertained with precision. In some districts they are very considerable, if taken comparatively with the rest of the farm; but in others, their management is so miserably bad, that it were perhaps too high to estimate them at 2s. per acre per annum. There is no doubt but these very meadows might be speedily brought, by draining, irrigation, and top-dressing, to fetch ten times that sum, and, over and above, to afford incalculable benefit and accommodation to their possessors and proprietors.

The expence of mowing, stalking, and harvesting meadow hay is greater in the Hebrides than in any part of our empire, if we consider the sacrifice of other objects,

jects, of time and of servant's labour, which they require. On comparing these different processes on the various isles, with the price of provisions and of labour, we could not estimate the harvesting of a ton of meadow hay, the average produce of an English acre, at less than L.2, which is one-third of its value; and in bad seasons at L.2. 10s. or even L.3 per ton.

SECTION II.—PASTURES.

THESE constitute a most important part of Hebridean rural economy. By much the larger portion of all the isles is devoted to pasture, and will long remain so. Lands are let according to the quantity and quality of their natural grasses in three-fourths of those isles, without paying much regard to other considerations; and even upon the islands which are not so exclusively given up to pasturage, but where corn, kelp, and fisheries occupy a share of the public attention, the quantity of land in natural pastures is very considerable. Exclusively of what may properly be called *wastes*, and of which we shall give an account hereafter, there are in the Hebrides of the denomination under our immediate review, about 200,000 acres, which are either in

some degree inclosed, or at least appropriated by marches to particular farms, and sometimes (though rarely) cropped with oats, potatoes, and barley. The part so cropped, however, is so inconsiderable that it does not deserve the name of arable land, nor does its management, as distinct from the great mass of pastures, merit any notice in this report.

The pastures of the Hebrides may be divided into two great classes, viz. the *high* and the *low*: the former yields herbage all the year round, consisting of the hardier plants, which delight in pure keen air, and a high exposure: the latter class affords little or no winter food, because it comprehends only grasses which spring up and decay in summer and autumn; and which, although luxuriant and rich during that period, disappear almost totally in winter and spring. The great art of the Hebridian grazier is to turn both these to the best account; but, from what we have witnessed at different times in that country, this art seems to be very imperfectly understood, and still more imperfectly practised.

The pastures in question yield not above 1s. 6d. per acre of rent, and are much in the same state at present as they were in the earliest times of which we have any traditions. This is the more to be regretted, because the natives very frequently possess the means of improving their pasture lands at a small expence, and to a vast amount. The value of 20s. of shell-sand, sea-sleech, marl, or sea-weeds, per acre, once in three years, would raise these lands, at an average, to be worth 5s. per acre per annum of rent. This has in fact

fact taken place in most parts of the improved Hebrides, to which we have so frequently alluded.

I. *Rich feeding Land.*

It is a common mistake to believe that none of this description occurs in the Western Islands. Most of them, on the contrary, contain as rich and nourishing pasturage as any district in the kingdom can show; and although the proportion of their general extent, comprehended under this denomination, is small, yet it is still so considerable that, if properly managed, it would amply supply the natives with fat cattle, and admit of some thousand head being exported to our maritime districts. The islands of Islay, Lismore, Tyree, Uist, Lewis, and Skye, possess a vast extent of very rich pasture, not above 100 feet above the level of the sea. Of their fattening properties it is sufficient evidence, that from the beginning of June, when the herbage becomes plentiful, till the latter end of August, *i. e.* the space of 90 days, is sufficient not only to re-establish the health and strength of cattle and horses which had been brought so low by want of food in winter and spring, that they could not rise from the ground without assistance, (a thing which frequently happens in many islands,) but to fatten sheep and cattle for the shambles, and to give horses the sleekness and plumpness of *Suffolk punches*.

The pasturage in question is composed of rye-grass, and the different kinds of clovers, red, white, and yel-

low, and of the following species of grasses, as well as some others of less note, viz.

<i>Anthoxanthum odoratum</i> , <i>Lin.</i>	Vernal grass.
<i>Alopecurus pratensis</i> , <i>Lin.</i>	Fox-tail grass.
<i>Agrostis capillaris</i> , <i>Lin.</i>	Fine bent grass.
<i>Poa trivialis</i> , <i>Lin.</i>	Common meadow grass.
<i>Poa pratensis</i> , <i>Lin.</i>	Great meadow grass.
<i>Poa angustifolia</i> , <i>Lin.</i>	Narrow leaved ditto.
<i>Festuca duriuscula</i> , <i>Lin.</i>	Hard fescue.
<i>Avena flavescens</i> , <i>Lin.</i>	Yellow oat-grass.
<i>Cynosurus cristatus</i> , <i>Lin.</i>	Crested dog tail grass.
<i>Holcus lanatus</i> , <i>Lin.</i>	Soft grass.
<i>Dactylis glomerata</i> , <i>Lin.</i>	Cock's-foot grass.
<i>Vicia cracca</i> , <i>Lin.</i>	Tufted vetch.
<i>Lathyrus pratensis</i> , <i>Lin.</i>	Yellow vetch.

These various sorts grow in profusion over most of the best fields near the sea coasts, and in the vallies of the Hebrides, and yield a rich and luxuriant prospect from the first week of June till the latter end of September. They are not, however, without their alloy. Some noxious and poisonous plants grow among them, which often visit cattle with distempers and death. Of these plants, the most common and pernicious are the following, viz.

<i>Conium maculatum</i> , <i>Lin.</i>	Hemlock.
<i>Ananthe crocata</i> , <i>Lin.</i>	Hemlock dropwort.
<i>Sium aquaticum</i> , <i>Lin.</i>	Water parsnip.
<i>Phellandrium aquaticum</i> , <i>Lin.</i>	Water hemlock.

Cicuta

<i>Cicuta virosa</i> , <i>Lin.</i>	Long leaved poisonous ditto.
<i>Ranunculus sceleratus</i> , <i>Lin.</i>	Marsh crowfoot.
<i>Taxus vaccata</i> , <i>Lin.</i>	Yew.

Of these pernicious plants the hemlocks and marsh crowfoot, both fortunately very easily recognised by the general run of Hebridians, are by far the most dangerous. They are found sometimes in rich land near old walls, church-yards, or the banks of running streams issuing from mineral springs, and ought to be carefully extirpated by the spade, and their roots burnt wherever they appear. Many of the horses and cattle, supposed to perish in consequence of other diseases, owe their death solely to the deleterious and poisonous effects of these plants; and young children are sometimes poisoned by the common hemlock, which they are apt to mistake for the wild carrot, *daucus carota Linnæi*, (sometimes called *bird's nest* in the lowlands of Scotland,) to which its top and roots bear some resemblance. This last plant, though not poisonous, is disagreeable to all quadrupeds, and ought to be exterminated. It is found in lands which are naturally barren, or have been rendered so by a succession of injudiciously managed white crops.

The rich feeding land of the Hebrides ought, where practicable, to be inclosed; and where manures, either alkaline or calcareous, can be procured at an easy rate, they ought to receive a top-dressing at least once in three years. In depasturing them, great care should be taken to limit, by skilful and attentive herding, the range of the herds and flocks daily, and to shift the
animals

animals from one park or inclosure, or from one subdivision of the pasture, regularly to another. This will prevent much loss of herbage, which would otherwise grow wild, run into seed, and be lost for the season, as well as prove beneficial to the grazing stock, by indulging them with a frequent change of clean and pleasant food.

With regard to *stock, rent, and produce in meat per acre*, whether of land devoted to rearing cattle, or to the dairy, or to sheep pasture in the Hebrides, nothing at all approaching to certainty can be here stated from experiment; and it would be impertinent to trouble the Board with mere conjectural calculations. When we come to treat of live stock in a future chapter, this subject will be resumed at greater length, and in the only way in which we apprehend any benefit can result, from discussing it, to the Western Islands.

II. *Laying land down to grass.*

1. *Preparation.*—The great thing wanted in the Hebridian farmer's method of laying land down to grass, is attention to two very obvious circumstances, viz. 1. That exhausted or wet land cannot produce good grass; and, 2. That the best sorts of grasses wear out, and that weeds increase precisely in proportion to the impoverishment of the soil. Instead of adverting to these plain facts, the Hebridian too often thinks that enough is done for his grass land, if it be allowed to lie lea, or without any sown crop of potatoes or corn for a few years, after having been reduced to a perfect *caput mortuum*

mortuum by a previous course of white cropping. He is astonished to find the quality and quantity of his pasture miserably degenerating and diminishing, and is ready to inveigh bitterly against his soil and climate for what in truth is entirely imputable to his own improvidence, stupidity, or mismanagement.

The abuse here alluded to, occurs most frequently on some of the best islands, both in respect of climate and of soil. We saw many thousand acres of good land in that state in the Long Island, Tyree, Arran, and even in the fertile Lismore; and could not help regretting the loss thus sustained in a district perhaps the best calculated in the whole of Western Scotland for laying down land to grass with immediate profit, and at a small expence.

The preparation generally requisite is obvious and simple. Let the land be annoyed with no water that can conveniently be carried off in autumn and spring, and let it be laid down to grass while yet in good heart. No man of sense will think of taking three successive crops of barley and oats, and, finally, one of rye, *without manure*, excepting the first barley crop, and then laying that field down to grass. No land can bear such treatment; and those guilty of it (a numerous class in the places already alluded to) deserve to have no Christian land under their Turkish management.

2. *Time of sowing.*—The time of sowing such auxiliary grass seeds as the Hebridian farmer will find advisable to mix with the natural grasses of his pastures, is from the middle of April to the third week of June. They may be sown either along with oats, barley, and
flax,

flax, or alone on the light and sandy soils near the sea shore, which are liable to sand-drift. In the last mentioned, they need only be slightly harrowed into the unploughed surface, and then rolled over, in order to consolidate the surface, and to preserve as much as possible the surface moisture from evaporation. This process will be found particularly advisable in the sandy districts of Islay, Tyree, Coll, and the whole of the western shore of the Long Island from Barray to the northern extremity of Lewis. The seeds of the grasses, which we have already mentioned as constituting the principal part of Hebridian herbage in the rich pastures, are those which ought to be sown. Many others might, no doubt, be introduced with advantage from other countries; but the indigenous tribes are so numerous and so excellent, that the natives need run no risk of disappointments by attempting grasses new to their soil and atmosphere. Of the last mentioned, some are recommended by persons of character and skill in the warmest terms, such, for instance, as the Irish fiorin (or more properly *fai-rim*) grass, so trumpeted of late in various publications; but, in the meantime, abundance of the native Hebridian grasses may be procured for the purpose in view, with very little expense, by means of due diligence and attention.

III. *Breaking up grass land.*

There are circumstances connected with the climate of the western coast of Scotland, as well as perhaps with its soil, which demand a different mode of management

nagement in this respect from what some good judges of English agriculture usually recommend *. We find that grass lands, especially the lowest lying and the richest, become in the west of Scotland foggy or mossy, and after six or seven years growth of that substance, carry not half the quantity of herbage which they yielded during the three or four first years after being laid down. Nor is wetness of bottom always the cause of this growth of moss. It is probably rather the effect of a moist atmosphere, and a feeble sun, aided perhaps by a mossy tendency in the generality of our soils. We know no cure for it so effectual, or so profitable at the same time, as that of breaking up the land, and taking three or four crops, white and green, in rotation, and then laying down the land in good heart and well dressed to grass. Top-dressing with calcareous and alkaline manures has also been tried and with some success, but nothing short of skilful tillage and cropping for a few years has been found a complete remedy.

The crop usually first taken from such lands in the Hebrides is potatoes or barley. It is more judicious, however, to take one of oats, as is uniformly done in the best cultivated districts of the lowlands of Scotland. After oats, a green crop, either potatoes or turnips manured, will answer, and after these barley with grass seeds may be sown, as the preparative for future pasture.

Although

* *Vid. et comp.* Mr Arthur Young's Address to the Board of Agriculture, May 26th 1809, p. 36, 37, 38.

Although no rents are given for permission to break up grass lands in the Hebrides, and, on the contrary, the farmers have full liberty to crop with corn all the parts of their farms which they think fit, yet, in some cases, we apprehend that a judicious landlord ought to insert some restrictions upon his tenants on this point in their leases. There is no doubt that much of the devastation occasioned by sand-drift arises from breaking up grass lands, which would be infinitely more safely, and far more profitably used under grass than under corn crops; and that many a farm is ruined, and several estates greatly injured in the Hebrides by that practice. With this exception however and a few farms of thin soil in Mull and Skye, &c. we can scarcely mention any other description of grass-land, in those extensive regions, which may not be ameliorated by a judicious rotation of culmiferous and leguminous crops after being broken up from pasturage for a series of years. It is always to be remembered, however, that we mean this merely of land in the lower grounds, and on which white crops will probably ripen, not of such land as lies too high above the level of the sea for the purposes of aration, or of rich meadow ground, such as occurs in many parts of England, and of which the herbage improves with age both in quantity and quality the longer it is kept ley, yielding a high and steady rent to the proprietor, a regular never-failing resource in pasturage to the tenant, and consequently, in the most liberal interpretation of the terms, comfort, capital, and power to the country.

CHAPTER

CHAPTER IX.

GARDENS AND ORCHARDS.

FLORA sometimes gladdens, Pomona never feasts those isles. A few noblemen and gentlemen, indeed, possess gardens which exhibit some of the common fruit trees, and all the common garden stuffs in tolerable perfection; and, no doubt, much may, and perhaps will, be done hereafter in this department of agriculture. We found however very little worth mentioning, excepting in Bute, Islay, Gigha, Collonsay, Coll, Mull, and Skye. In the two first mentioned islands, the great proprietors have gardens nearly equal to any in the adjacent districts of the Scottish continent. Gigha and Collonsay, however, especially the latter, which is the more exposed of the two in point of situation, prove that the sea air is perfectly compatible with the beauty and health of trees, and with the utmost degree of fertility

fertility in pulse and vegetables of every description which are suited to our Scottish climate. The isle of Skye, lying near the mainland, and being in itself of great extent and vast variety of surface, contains a considerable number of gardens; and some of them, especially Lord Macdonald's at Armadale in Sleat, Colonel Macdonald's at Lyndale, Mr Macleod's at Talisker, &c. are pretty well furnished with fruit trees of various kinds. But, upon the whole, it must be confessed that horticulture has made very little progress in the Hebrides, and that no portion of equal extent of Great Britain, containing so numerous a population, is so destitute of gardens and orchards as those isles.

The fruit trees which we found to thrive best are the apple, pear, plumb, cherry, apricot, and gean tree. This last is of the same species with the cherry, and produces a good crop in almost every part of Scotland, where it can be saved from the depredations of birds.

It is not to be expected that much should be done in gardening in a district of which by far the greater part of the proprietors are non-resident, nor does the climate yield any particular encouragement to the prosecution of that delightful art. The winds are too violent, and the sun too shy of shewing his face. Until trees and other sorts of shelter become, therefore, more general, the gardens and orchards of the Hebrides will probably be little more than an empty name.

CHAPTER

CHAPTER X.

WOODS AND PLANTATIONS.

SECTION I.

WHEN Donald Monro, Dean of these Isles, travelled through the Hebrides in 1540—9, he found most of them covered with wood. They appear to have still retained their clothing in Buchanan's time, 200 years ago, and to have gradually been stripped of it from that period until they fell into their present state of almost absolute nakedness. It is in vain to enlarge upon the causes of this misfortune. They may easily be traced in the dismal history of the times. One exhilarating remark, however, occurs to the traveller who traverses these bleak and woodless recesses, amidst the melancholy impressed upon him by comparing their present aspect with the descriptions which he reads in Buchanan and Monro; namely, that where trees have formerly grown,

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they

they will grow again ; and that any regions which were once sheltered and adorned by the hand of nature, may still be in a far higher degree improved and embellished by the industry of man. While we are fully sensible of the difficulties which the first attempts to raise plantations will infallibly have to encounter, we are at the same time aware of some advantages, and these, too, far from inconsiderable, which the Hebrides possess in a degree superior to any other portion of our country. These are, among others, the following :

1. The vast extent of ground fit for planting, which is at present of little use to the proprietors and to the nation, but might be turned to great account to both, by being planted with timber *.

2.

* Trees grow better on the western than on the eastern coasts of Scotland; and we accordingly find that the former is of the two by far the best wooded. On the western coasts the frosts are less intense; the prevailing winds, though generally too strong and often prejudicial in other respects, bring much warm moisture, which is favourable to the growth of trees. Mildews, proceeding usually from cold easterly winds, are very rare; and the various tribes of vermin which infest all the eastern provinces of Britain, are neither so numerous nor so pernicious in the western. Natural woods are therefore found on the western coasts, wherever the land is inclosed, to spring up luxuriantly; but on the eastern they are scarce, dwarfish, and sickly.

2. The facility of inclosing ground for plantations to an indefinite extent on the large islands, by means of the salt and fresh water lochs, rivers, precipices, and impassable bogs with which these isles abound.
3. The high price and great value of trees in this region; the first in consequence of the total want of wood at present, and the great demand for that article by a rapidly increasing and maritime population; and the last, or the value of timber, singularly enhanced by the facility of transporting it from the place of its growth, not only to the isles themselves in all directions, but also to every part of the British Empire. This last circumstance deserves particular notice: it is a fact, no less pleasing than singular, that no spot in the Hebrides fit for being judiciously selected for the purpose in view, is above two English miles from the sea-shore, and scarcely any which is not within six miles of a good harbour. The same can be said of no other part of Britain, or of Europe, equal to them in extent.
4. The incalculable benefit which a region so exposed to the Western Ocean would derive from the shelter afforded by woods, and the vast amelioration of climate and soil which would be the consequence.
5. The rise of rents to proprietors, which would speedily follow the erection of good farm-steadings, fences, and other works now obstructed by the scarcity of timber upon all their estates.

6. The obvious facilities which abundance of timber and of willows for barrel-hoops, creels, and other purposes, would yield to the fisheries, to agriculture in general, and to the kelp manufacture.

Whoever impartially considers these inducements, which every great Hebridian proprietor has in a more or less degree, for planting trees on his estate, will be astonished at the little influence which they have hitherto manifested on their conduct. There are no more than 5000 acres under woods and plantations in all the Hebrides, *i. e.* nearly one acre out of 300 of their surface; and did we exclude Islay, Mull, Bute, and two districts of Skye, we would find scarcely one acre of wood of any description for 2000 of their naked extent. The whole Long Island, with its numerous and populous dependencies, comprehending altogether about *half a million* of acres, contains not *a single acre* of wood which deserves the name of either copse or plantation.

In Islay, Mr Campbell of Shawfield prosecutes his plantations with great spirit and success. In various parts of that island we found as thriving larches, silver and Scots firs, beech, lime, oak, ash, elm, plane, birch, and willows of various kinds, as well as the native trees of all the isles, aller, roan-tree, hazel, &c. as any of the same age in other parts of Scotland; and the effects of their shelter begin already to be sensibly felt on the island. The ride from the landing place at Portascaig (where some very beautiful trees cheer the traveller's sight) to the village of Bowmore, is beautifully varied by young and thriving plantations, and
contributes

contributes to prepare the mind of a stranger for the warm praises which he afterwards receives of the proprietor's taste, liberality, and judgment.

In Skye, Lord Macdonald's charming *Belvidere* of Armadale*, (as a foreigner of exquisite taste very justly calls it,) displays as vigorous and beautiful trees, both forest and fruit-bearing, as any spot in Scotland. His Lordship has with great propriety begun to plant in other parts of his noble property in Skye, and not only on lands in his own immediate possession, but also by suitable encouragement to some of the most respectable and judicious of his tenants, he is in a fair way of adding greatly to the value and the beauty of that island.

In the island of Scalpay, belonging to Lord Macdonald's district of Strath there, we found a considerable quantity of thriving natural wood, chiefly consisting of birch, aller, hazel, and roan, nigh the ferrying place, where nothing but stunted shrubs was to be seen 20 or 30 years ago. The attention paid by the present tacksmen, Mr Macdonald, to the spot in question, is evidently the cause of this change, and ought to prompt others to imitate his example.

X 3

Mull,

* Dr Walker found here the following exotic plants and shrubs in 1768, in good condition, and we found them thriving 40 years afterwards, in 1808, in the same place, viz. *Platanus orientalis*, Lin. The oriental plane.—*Gleditsia triacanthus*, L. Three thorned acacia.—*Cercis siliquastrum*, L. Judas tree.—*Rhamnus paliurus*, L.—*Tamarix Gallica*, L. French tamarisk, &c.

Mull, being well sheltered from the Atlantic, especially on its eastern and north-eastern coasts, has, in spite of neglect, still preserved several spots of valuable wood. That island can afford room, without any material loss of grazing, and with none of tillage, for 40,000 acres of planting, a quantity which, in 40 years hence, at the lowest computation, would amount to triple the value of the fee-simple of the island.

Mentioning the few islands in which we found wood, we have particular pleasure in classing Collonsay among the number; both because it is an agreeable task to record the performances of skill and industry, and because the raising of wood on so exposed and small an island, is a proof that neither the storms nor the sea spray of the Atlantic are insuperable obstacles to woods and plantations in the Hebrides*. Trees of different ages, from that of 3 to 70 years, were here shown us this season, and, in general, they appeared to be thriving and healthy. Some very fine ash trees, upwards of 50 feet high, and of proportionable diameters, stand near Mr Macneill's house, and the young planes, larches, and willows are very promising and beautiful.

We might name some farmers also who have lately planted trees in the Hebrides, and whose labours promise

* "Cha n'fhàs Coillé gu bráth s'an dúthich seo," *i. e.* "Wood will never thrive till the day of judgment in this district," is the common expression and belief of the lower classes in the Hebrides; and sorry were we to find the same opinion rashly taken up by many of the higher ranks, and totally controlling their practice.

mise to be crowned with success, but the instances which have now been given are stated rather for the purpose of showing that woods and plantations might be carried on there with every prospect of advantage than as proofs of eminent proficiency in this branch of agriculture.

SECTION II.

As there is no regular system of managing coppice woods of any description in these isles, we need not dwell upon the 1st and 2d sections of this chapter, and therefore proceed to the 3d section, premising, however, as we have frequent reason to do, that all the observations which shall be made, are calculated rather for the *advantage of the district* to which they refer than for communicating to the Honourable Board new or useful information upon this very essential department of rural economy.

SECTION III.—PLANTATIONS.

1. *Sort of trees.*—It is rational to suppose that the sorts of trees most likely to thrive in every soil and climate by cultivation, are those which are found growing spontaneously in the country, or of which some traces or remains are discovered to be incorporated with the soil. In the isle of Skye and district of Sleat, Lord Macdonald has a natural wood of considerable extent, (near the ruins of the Castle of Dunscaich, celebrated in Ossian's Poems as the residence of the heroic Cuchullin,) in which we found the following species of trees, apparently in good health, and evidently agreeing with their situation, viz. oak, ash, alder, birch, holly, roan, hazel, and gray willow. In North Uist, on the same nobleman's estate, we found some dwarfish alders or allers, oaks, birch, and mountain ash, and the mouldering remains of most of these trees, (of much greater dimensions than any to be now seen on the surface,) buried several feet deep in the mosses or peat-bogs near Loch-Maddy. There is little reason to doubt that, by good management, these different kinds of trees might be raised on these islands with success, and that they are of all others the best adapted to the soil and climate. The soil is partly composed of their remains, and such is well known to be the fittest for bringing plantations to their best growth.

In Hebridian plantations we have found the following sorts the most thriving, viz. the oak—ash—elm—
beech

beech—plane—chesnut—walnut—horse-chesnut—lime
 —maple—Scotch-fir—larch—spruce-fir—silver-fir—
 balsam-fir—pinaster—birch—black-popular—abele—
 aspen (celticé crithinn, i. e. *trembling tree*)—alder—
 roan, or mountain ash—willow—laburnum—yew.—

These 25 sorts may be found in the Hebrides, but in no considerable quantities even in the best isles. One essential difference between the various sorts of them must be attended to with care, i. e. the property of *stoling*, or growing from the roots after being cut down, peculiar to some of them, and which makes them in most situations much more valuable than those which do not stole.

The trees which stole are,

Oak,	Plane,	Alder,
Ash,	Maple,	Abele,
Eln,	Birch,	Aspen,
Chesnut,	Lime,	Roan,
		Yew.

The trees which do not stole, or grow vigorously after cutting,

Beech,	Balsam-fir,	Black-popular,
Scotch-fir,	Pinaster,	Walnut,
Spruce-fir,	Larch,	Laburnum,
Silver-fir,	Horse-chesnut,	White Willow.

The following may be selected and planted with great advantage in the situations which we shall now describe.

Oak,

Oak, the king of the forest, must have a deep soil, and will not thrive without its roots having access to moisture. It may be planted near stagnant pools; and is found naturally to thrive in spots much overgrown with fern. The best way for the propagation of this excellent timber in the Hebrides, will be to raise oaks from the acorns, or, at all events, to transplant the tree very young from the nursery into the ground destined for it. It should not be older than two years, and ought to be sheltered by coarse wood, such as fir or larch, or by copse wood.

Ash.—This tree, perhaps the most useful of all for agricultural purposes, grows pretty fast, and spreads its branches widely, so that it may be called a top-heavy tree. It accordingly requires shelter, and grows most vigorously in gravelly stony ground, on the banks of running streams; and provided it be protected from the storms, can indure any degree of cold without injury.

Elm.—This tree has one strong claim to the Hebridian's attention; it grows in moist land, delights in moisture, in deep ground full of rushes, sprats, and fern; and, in short, demands precisely the soil and climate of which the Hebrides have a superabundant supply. It is, however, also top-heavy, like the ash, and requires shelter against the Atlantic storms.

Beech.—It is generally imagined that beech can withstand the effects of sea-spray and sea air in Scotland better than any other species of forest timber. It
does

does not, however, in the Hebrides, give any indications of that precious property. On the contrary, we have found this tree, generally speaking, so poor, that we cannot strongly recommend its cultivation. In the Danish isles and on the coasts of Pomerania and Prussia, we have indeed admired the size and beauty of beech woods, which grew luxuriantly to the water edge; but though we cannot account for the fact, it is unquestionable that every attempt to rear this tree hitherto made in the Hebrides, excepting in Bute and Islay, has been in a great measure unsuccessful. Retaining the leaf for almost the whole year is a good quality of beech, and ought, if other properties correspond, to induce Hebridians to use every means for availing themselves of it as shelter to their lands.

Plane.—The wood of this tree is not so very valuable as some others which thrive in the Hebrides, but it has the invaluable advantage of buffetting the storms better than any other species of hard wood. It ought therefore to be placed in the advanced guard, and on the outpost piquets of our sylvan host in its perpetual conflict with the Atlantic tempests. It thrives well in Collonsay and Islay, and promises to do the same in different parts of Mull and of Skye.

Horse-chesnut.—This is a hardy plant, and thrives well in dry, sandy, and gravelly soil, even though much exposed to the winds. It promises well in Islay and Skye, and is found in excellent condition in Mull.

Scotch-fir

Scotch-fir.—This most accommodating inmate of poor naked Caledonia, will not disdain the poorest station from the sea level to fifteen hundred feet above it, nor a stance on any soil however wretched, which is tolerably dry and open. Wherever heather grows, the Scotch-fir will also grow,—and that is saying enough to a Scotchman as an inducement to plant this tree.

Larch.—We have found this tree in equal perfection in every soil, exposure, and climate from the banks of the Hellespont * and the groves of Lusitania, to the inhospitable cliffs of Lofoden, and Thurso Castle †, of very opposite character. An Alpine plant, its natural situation is mountainous and cold. It grows rapidly, and to a large size, overtopping every tree in its vicinity, sheltering them indeed from foreign foes; but, like other powerful protectors, frequently crushing them by his own arms, and overwhelming them by his weight. The larch grows well in the rubbish of mountains, the clefts of rocks, and on the steep banks of rivers or lakes. In Switzerland it grows on mountains to the height of four thousand feet above the level of the Mediterranean; but in this island, and in Ireland, we find it no where thrive at a height of two thousand feet above the sea mark. It grows in deep moss better than even the Scotch-fir, and is likely to be most extensively

* It is the *λῆξ* of Homer.

† The seat in Caithness (the northernmost extremity of the British island,) of the President of the Board of Agriculture.

and profitably cultivated over the whole of our empire. The ~~new~~ larch planted in Scotland was carried by the Duke of Atholl ~~in~~ ^{England} in 1727, and planted by him near the cathedral of ~~Durham~~ ^{Some} trees of this species, in that place, measured in 1808 ninety-eight feet in height, and 10½ in circumference eight feet above the ground. When it arrives at a proper age, i. e. 50 or 60 years, the larch is a very useful sort of timber, resists fire, and, if kept dry, will last undecayed for ages. About 4000* plants may be placed in one Scotch acre of land; but of these only 700 or 800 can attain a considerable growth, the rest being gradually cut down to afford proper room for them.

Spruce-fir.—A great advantage of the spruce-fir is, that it requires a very moist spouty situation, and that it is not top-heavy, so as to be violently agitated by the winds.

Balsam-fir.—Any soil, however coarse and boggy, provided it be deep and not too high above the sea level, will answer for this plant. It grows quick, and deserves being more generally cultivated than we find it at present in this country.

Pinaster.

* A Scotch acre contains about 55,000 square feet, and consequently affords nearly 14 feet, or about 3 feet 9 inches square to each plant. This is room enough during 4 or 5 years; but after the plantation attains the age of 20 or 25 years, 7 or 800 is the utmost that can be accommodated, supposing every one to thrive.

Pinaster.—No plant can be more serviceable than this, in a district so liable to suffer from blowing sands as are many of the Hebrides. It thrives in the very driest sand near the sea shore, provided it be somewhat sheltered from the violence of the wind. The great objection to the planting of it is the badness of the wood, it being unquestionably the worst of all the fir tribe.

Birch.—An Alpine tree,—the birch grows on more elevated and in more exposed situations than any of our native trees, the common fir perhaps excepted. It is found on almost all the isles, and therefore ought to be planted in abundance as a species of wood natural to our soil and climate.

Abele.—This, although not a valuable kind of wood for agricultural implements, may become extensively useful in the Hebrides; for it thrives in deep mosses as well as on dry and blowing sands. It must be planted deep.

Aspen.—Being indigenous in all the larger isles, this tree will thrive on any moist soil in them, and it resists the sea-spray and bears the sea air as well as any plant with which we are acquainted.

Alder or Aller.—This tree is also indigenous, and grows in the wettest mosses, and at any height from the sea level to that of a thousand feet above it. Its wood is not valuable any where else; but any thing in the shape of wood is so precious in the Western Isles, that

that even the aller ought to be carefully propagated. It might be tried on sleechy ground near high flood mark, and on marshy soils, where nothing else can be raised with advantage.

Willow.—The various species of ~~willows~~ merit all the attention which the Hebridian agriculturist can afford to pay to them; and it is astonishing that a plant so very useful for making creels, baskets, hoops for casks and barrels, &c. and for innumerable purposes equally obvious and necessary in this country, has hitherto been so deplorably neglected. Mr Campbell of Shawfield and Lord Macdonald have, however, commenced the planting of willows, and will very probably carry it on to a great extent. The willow grows well in wet ground of every description, excepting stiff clay. It thrives on moist sands, and even among *blowing sands*, and wherever sea-bent is met with. An acre may contain 10,000 plants. Scarcely any vegetable can vie in point of profitableness with the willow on moist land. It may be planted with great advantage in the corners of potatoe fields, which have been cultivated in the lazy-bed way. The willow-cuttings, about 18 inches long, should be planted to the depth of 13 or 14 inches, (leaving only three or four eyes or sprout-hollows above ground,) at the distance of three feet from each other in the drills, and nearly two feet in the rows. They may incline a little towards the west or south-west. In three years they are ready for use; and an acre often sells at L. 28 or L. 30 Sterling. The price of hoop willows in 1809, at Leith, was from 40s. to 45s. per thousand sticks. The length fit for a
common

common herring barrel, containing 32 gallons, is 7½ feet, that for a hogshead from 10 feet to 10 feet 4 inches. Vast quantities are imported from Holland, although there is a duty of 15s. per thousand paid by them. One thriving tree yields from 12 to 18 hoop-shoots or staves, and they increase for several years in number. The intervals of cutting are three years.

Roan or Rowan, sometimes improperly called mountain ash.—This tree is a native of the Hebrides. On the little island of Wia, near Benbicula, on Mr Macdonald of Clanranald's estate in the *Long Island*, we found this tree more vigorous and flourishing than any plant in that large division of the Hebrides. In Lewis and North Uist we also found it, though much neglected and exposed to the depredations of sheep and cattle, more like what one would call a tree, than any other species of plant. It grows in the stormiest and highest situations, in the jutting precipices above lakes and rivers, and even the ocean itself, and may certainly be raised by due attention on all the larger Hebrides, and the opposite Scottish coasts.

Laburnum.—This is a hardy plant, and thrives in wet moorish soil, in spite of cold and storms.

Such are the trees which best suit the soil and climate of the Western Isles; and although they are not found all to answer on the same island or estate, yet, generally speaking, they may be cultivated to advantage on most of the more extensive Hebrides.

The

The manner of dressing the ground for them and planting them, is understood by every gardener of experience; but would be too tedious to insert in this report. Every proprietor, who intends planting, ought to engage a professional workman and two able-bodied labourers for a whole season, as well as give young plants, or seeds, to his tenants, with suitable directions how to manage them. Such proprietors would find their advantage in encouraging their dependants to plant forest trees round their stack yards and gardens; and in allowing them a proportion of the value of such trees in the event of their removal at the expiry of their leases, or even permitting them to use at pleasure a stipulated share of all trees planted and reared by themselves, which should attain a determinate age and size. The number and quality of such trees on every farm might be engrossed in the factor's books, along with the rent, &c. of the lands, as is done in Holstein, and in several parts of Germany and France.

2. *Expence.*—No average can be fixed with precision for the expences of planting in these isles. The larger the plantation is, the smaller is the expence of inclosing, which is by much the most serious part of the whole process, and of which we have given some account in Chapter vi. The expence attending the plants and the labour of planting is various, according to situation and other circumstances, and amounts to from 20s. to 40s per acre. In some cases we found it so low as 15s. but this was in the neighbourhood of nurseries, and in a district peculiarly favourable for prosecuting this improvement.

3. *Management.*—Lord Macdonald's and Mr Campbell of Shawfield's plantations, as well as a few in the isle of Mull and in Ulva, are managed with considerable attention and skill. The first mentioned has nurseries at Portree, in Trotternish in Skye, and also at Armadale in Sleat, which will turn out of vast service to his own estate, and probably, in the course of time, to the adjoining islands*. Mr Campbell of Shawfield plants many thousand trees annually, and may live to see Islay assume an appearance very different indeed from that of the general nakedness which has for a century past disgraced it, along with the rest of the isles. He reserves, for his own disposal, such spots for plantations, on the farms which he lets, as he thinks fittest for the growth of timber; incloses them with

* Pruning and cutting down trees ought to be performed with great caution, and particular attention to their natural properties. Such as need pruning ought to undergo that operation a little before the formation of the leaf, or as soon after the cold of spring as possible. All trees, without exception, ought to be cut down or felled soon after the falling of the leaf, and before the sap gets into motion and circulation for the growth of the ensuing season. This will make a considerable difference in point of time, between the early trees, such as the plane, birch, lime, poplars, &c. and those which are later in forming and in casting the leaf, as the oak, ash, beech, &c. and it has great influence upon the solidity, durability, and value of the timber. As soon as the tree is felled, the bark ought to be stript off, to prevent budding and consequently a tendency to rottenness and putrefaction.

with stone fences, sufficient to protect them from cattle and horses, and then plants them at the rate of two or three thousand plants to each acre, with various sorts of trees, and makes the tenant answerable for the safety of such plants. He himself, his factor, and gardeners, occasionally visit these inclosures, and provide for whatever may tend to their prosperity. As they, as well as all the other plantations in the Hebrides, still are, properly speaking, in their infancy, nothing further need be said here of their management. It will of course be an interesting subject twenty years hence, to explore these commencements of Hebridian plantations, and to study the different methods which have proved most effectual for promoting them; but to reason upon them from what has hitherto appeared, would be rash and premature.

4. *Profit.*—Some ash trees were, about 30 years ago, sold at Armadale, in Sleat, by the late Lord Macdonald, to millers and others, at the rate of L. 4 10s. and L. 5 Sterling a-piece; and these trees, from the progressive rise in the price of timber of late years, would very probably now fetch double or perhaps triple that sum. They grow to the number of from 120 to 180 upon the acre; and consequently amounted to the value of from L. 450 to L. 600, on land similar to such as was never let in Skye at a higher rate than from 8s. to 10s. per acre yearly*. Supposing the acre, then,

Y 2

on

* No land has ever been hitherto rented at a certain sum per acre in Skye, but every person acquainted with that island,

on which these trees grew, had been let in 1778, when the trees were sold, at 10s. the rent paid in 1809 would have amounted to L.15. 10s.—and granting that the rents had doubled in twenty years, and half doubled in the succeeding years, the in-cumulo would make only L.45. 10s.—Or, further, supposing that the acre in question had been sold at 40 years purchase, (a high price for land even in Skye,) the cost of the fee simple would have been L.20!! What a difference does this shew on *one acre* of land, and how immensely would the advantage of planting be enhanced in apparent as well as in real calculation, if, instead of *one acre* of land in Sleat, we suppose Lord Macdonald's ancestors had, a century ago, inclosed and planted five thousand, as they might very easily have done? Such inclosure would now be worth from five to six hundred thousand pounds, or nearly the value of the whole isle of Skye.

As so little wood has for ages been raised or sold in the Hebrides, we cannot pretend to state with any accuracy the real profits which might be made by planting trees in that country; but, as this report cannot be confined to what exists, but is intentionally extended to what might be produced, and what ought to be begun in consequence of the spirit for improvements in every walk of rural economy which the Board of Agriculture wishes to encourage and to promote, we venture

island, and with the usual rate at which lands are let in it, will, we are convinced, deem this a high rent for its best in-field grounds, excepting hay meadows and manured corn fields.

ture a few suggestions, which may prove useful to such proprietors and farmers as shall attempt planting in the Western Isles.

The first thing to be considered is shelter, both from the western gales and from the depredations of sheep and cattle. This last must be complete; and, as to a protection from the prevailing winds, no advice can be given so effectual as that of planting the hardy trees, which are selected from the 25 different sorts already mentioned, in considerably *large masses*, very young, and pretty close upon each other, and with a hillock well furnished with larch and plane trees forming the portion of the inclosure which fronts the south-west. The most furious tempests experienced in the Hebrides, are found to blow from within three or four points of a south-west wind. The trees to be chosen will depend upon the nature of the ground intended to be inclosed, and upon various other circumstances, of which only a man on the spot can be a competent judge. Such as are least top-heavy, and consequently least subject to be wind-tossed, (the great bane of young trees,) will stand outermost, and the more valuable and delicate, as the ash, beech, oak, &c. towards the centre of the plantation. With regard to the sea-spray, it will not prove pernicious, provided the bay or arm of the sea which borders on the inclosure is land-locked, or in some degree sheltered from the west. It would be of infinite advantage to the larger Hebrides, and especially to the sandy districts in them, to plant the seeds of broom and furze, or whins, (*Gallicé, connis*,) for the double purposes of shelter and of winter food for horses and cattle. It appears strange to a person who travels

through the Hebrides, to find neither of those plants to the northward of Gigha and Islay. They ought to be extensively cultivated, and especially along such inclosures as are intended to protect young plantations on grounds which are dry and exposed.

In Lyndale, in Skye, as well as at Scalpay, and at Mr Mackinnon of Corry's parks of Liveras, near Broadford, all three exposed to the sea air, and within a few yards of the sea-mark, we found larch, plane, ash, birch, firs of different kinds, willows, and some others of the common Scotch trees, thriving in a manner which reflects credit on their cultivators, and at the same time proves that a considerable profit will speedily result from their efforts. It is presumed, that what takes place in Skye, may be taken as a pretty general rule for the larger Hebrides; that island being so situated as to partake in its different districts of the climate, and even the vegetative peculiarities of the whole of them. It is certain, that were our reasonings to be founded upon what has been done in Bute or Islay, the rest of the Hebrides would look upon them to be as inapplicable to the average districts of their country, as if they related to Devonshire or the Isle of Wight.

Some acres have been planted in Skye eight years ago, at the rate of nearly L. 5 per acre, every thing included, excepting one half the expence of the outside of the inclosure wall; a fence which serves to protect the meadow-hay mixed with the trees, and of which therefore, as indispensibly necessary on that account, the hay crop ought to bear half the burden. There were 4000 trees of different sorts planted on the acre, some of which, the larches and willows especially, are

now

now about 10 or 12 feet high, and the thinnings of which are extremely valuable for many purposes on the farms to which they belong. Let us suppose them only worth the rent of the land, or 10s. per annum. In 30 years, there will remain on the acre at least 700 pretty well grown trees, each of which will have a free space or stance of 77 or 78 square feet and upwards. The account of profit and expence will stand then as follows :

One acre of plantation Dr.

To original expence of inclosing and plant-

ing,	-	-	L.5	0	0
— interest of that expence for 30 years,			7	10	0
— attention and pruning,	-	-	10	0	0
— repairs of gate and fence,	-		5	5	0
— draining and occasional dressing,	-		10	10	0
			<hr/>		
			L.38	5	0

One acre of plantation Cr.

By 700 trees 30 years old, at 5s. L.175 0 0
 By thinnings, equal to rent of the land,

Clear profit in favour of the acre,	L.136	15	0
-------------------------------------	-------	----	---

or L. 4. 11s. 2d. per annum.

To any man acquainted with the isle of Skye, nothing in this estimate will appear objectionable, excepting perhaps two items, viz. the original expence of inclosing, and the price specified for trees of 30 years of age. The first will appear very low, and the last still

lower in proportion. They therefore balance one another in the argument. But it is believed that the expence of inclosing is not under-rated. In the northern counties of Scotland *, the expence was, a few years ago, estimated at one pound per acre, when a considerable extent of ground was inclosed, and the very worst trees were reckoned worth 2s. 6d. each at the end of 40 or 50 years, even at a *distance from the sea*, and consequently not half so valuable as the same trees would even then have been in any part of the Western Isles, nor one-third of the value which would be fixed on them at present. Mr Arthur Young states the expence of inclosing and planting in the east of England, where prices are more steady, at L. 3 per acre †. In Stirlingshire the same expence is from 8s. to 25s. in Somersetshire 28s. and in Wiltshire 44s. ‡ per acre. We have given it as high as L. 5 on account of the high wages of masons and artisans labour in the Hebrides, and also because the inclosure itself must be better made and much more substantial, by reason of the strong winds and the mischievous or active nature of
of

* *Vid.* Agricultural Report of the Northern Counties, p. 107,—“The expence of inclosing a plantation of 100 acres, and planting it with Scotch fir, is generally calculated at L. 1 per acre, and the undertaker upholds the plants for seven years.”

† Young's Tour, p. 330.

‡ *Vid.* Agricultural Reports of those Counties.

of the cattle in these isles than any where else in Britain.

We have purposely given a low average value to the trees, which might safely have been marked down at 8s or 9s each, because, in an estimate of this kind, every approach to exaggeration is carefully to be avoided. It must not, however, be forgotten, that if a proprietor, instead of making an inclosure and plantation of a few acres, chooses to act wisely, and to plant a mile or 500 Scotch acres, he can inclose it at the rate which we have already calculated, (Chap. vi.) of L. 880 or 35s. per acre; and if he extends it to the length of 16 square miles or 8000 acres, (a thing easily done on the large estates,) the whole will amount to L. 3520†, and the inclosing of each acre only to 8s. 9½d.

This is, however, always on the supposition that the Hebridian plantation must be *artificially* fenced on *every* side, and receives no aid from the natural surface of the country; or, in other words, it is taking the most unfavourable view of the case in which theory can place it. In fact, however, the real situation of the practical improver is widely different. The islands abound with lakes, arms of the sea forming innumerable peninsulas, and islets, and with precipices or impassable morasses and steep-banked torrents, which afford facilities for completely inclosing vast tracts in almost all the larger Hebrides, of which a man unacquainted with them can form no conception. In North Uist, Lord Macdonald can inclose 12,000 acres, and that

* *Vid.* Chap. vi.

† *Ibid.*

that impregnably, against all land quadrupeds, by a fence of *two English miles*. He may inclose some parts of his immense estate in Skye at the rate of 10s an acre,—and Lord Seaforth, Mr Macdonald of Clanranald, and all the great Hebridian proprietors can do the same.

There is one description of land, and that too of considerable extent, which the proprietors of the Hebrides ought certainly to dedicate to plantations of timber; viz. the islands, or islets, of their fresh water lakes. These are inclosed to them by nature, requiring only a few stones to be piled up in the creeks or shelves, on which deer or cattle usually land on them in quest of pasture, when hunger compels them to swim to those islets from their usual haunts; and as soon as regular herding and proper farm inclosures shall have been introduced, even this precaution will be superfluous. Most of these islets, even in unfavourable situations, and on the Long Island itself, the most exposed to the Atlantic of all the Hebrides, are covered with brambles, short juniper, and brush wood of various sorts, and would, if protected, unquestionably rear forest trees of different kinds. They would answer for the aller, willow, roan, plane, aspin, and even ash and oak in many places, and prove more valuable, in the course of time, than ten times their extent of the large islands to which they belong.

Before concluding this section, we may be allowed to hint a measure, which, to some, may appear wild and extravagant, but yet which we cannot help believing to be intimately connected with a comprehensive and patriotic report of the present agricultural state of this region.

It

It is notorious that one half of the extent of the Western Islands, or nearly 800,000 acres, are in a manner lost to the country as well as to the proprietors. Three-fourths of that extent, it is confessed, are rugged mountains, morasses, and inland peat-mosses, which (though covered with wood in former times, as appears from trunks of trees found in them), it would be extremely difficult to bring speedily into a productive state. Of this description are two thirds of the great island of Lewis, a large proportion of Harris and the Uists, and perhaps one-fourth of Skye and Mull, and one half of Jura, Arran, and Rum. But the remaining fourth-part, or 200,000 acres, lie low, *border on the sea upon their eastern sides*, admit of draining, inclosing, and planting, and, in one word, might form a grand *national forest*. It would indeed be an incalculably precious acquisition to the British empire, and, considering it as such, we have thus ventured to mention it.

The present value of the land in question is almost nothing*; insomuch indeed that many farmers on the large

* The valued rent of the Island of Lewis, for instance, is 5250 pounds Scots, or L. 437. 10s. which was supposed to be its fair rental before the introduction of kelp, and when the valuation was made in the last century. That island, or rather the division of the Long Island called Lewis, is about 300,000 acres in extent. Now, supposing we estimate the arable and meadow land at 1s. per acre, and the quantity then in regular occupancy 5000 acres, we have L. 187. 10s. as the rent paid for the wild extent of 295,000 acres; or an acre of Lewis land at little more than *half a furthing*
per

large islands do not know how much of it is attached to their rented lands, and consider it as a sort of common-ty, in which nobody finds himself sufficiently interested to look after it. Perhaps we are rather above the value, when we fix it at a penny an acre, even supposing it strictly appropriated and pastured in its present inclosed state. This would yield L.833. 6s. 8d. per annum for the 200,000 acres

Let that ground, however, be inclosed and planted, and the account will stand pretty nearly as follows : making all possible and reasonable allowance for the inferiority of

per annum! The Island of Jura, comprehending about 50,000 acres of surface, was in 1751 valued at L. 299. 7s. 9d. Sterling, which was a small fraction more than a penny an acre. The quantity of ground which could be called arable and meadow, was always in proportion more valuable than that of Lewis, and may be estimated to have been worth 1s. 6d. per acre even at that time ; the number of acres of this description was nearly 1400, which paid L.105. of the total L.209. 7s. 9d. leaving L.104. 7s. 9d. for the remainder of the island, or 48,600 acres, *i. e.* about a halfpenny per annum for every acre of waste land on the whole island.

It is true these islands now pay much more than they did when their valuation was made, and the valuation itself was very low also ; but their rents are still so low in proportion to their extent, especially in their mountainous parts, that our calculations are by no means overcharged in favour of the supposed plantations. The other large islands, Arran, Mull, and Skye in particular, admit, in some parts of them, of nearly the same reasoning with Lewis and Jura.

of the general run of this ground to the spots of land inclosed and planted in Skye, of which we have already given some account.

Expence of inclosing and planting, &c. 200,000 acres.

To inclosing 200,000 acres, at L.1. per acre	L. 200,000
— planting ditto, (at L.2. per acre, including interest of the money)	- - - 400,000
— preservation and watching for 30 years	60,000
— repairs of inclosures and of gates for ditto	100,000
— draining the ground and fencing against rivers	- - - 100,000
— interest of L.200,000 for 30 years	300,000
— rent of land sunk, L.833. 6s. 8d. per annum	25,000

Grand total L.1,185,000

Contra—By 200,000 acres, each 300 trees at

2s. - - - - 6,000,000

Clear Profit L.4,815,000

This enormous profit would be made by government, or by any public association which possessed the portion of the Hebrides of which we treat as their own property. It remains therefore to deduct the purchase money, or the fee simple, of the lands, and its interest for 30 years. Let us take it at 40 years purchase of the rent already quoted, viz. L.833. 6s. 8d. and we shall have as the purchase price L.33,333. 6s. 8d. Sterling; which sum being deducted from the price of the wood, still leaves L.4,781,666. 13s. 4d. to the credit of the plantation.

In

In this calculation, we have deducted nothing from the expences of the plantation for the number of trees cut-down and sold off or used as thinnings, and which would, in all probability, amount to three times the number of 300, which we have allotted to each acre. These thinnings however, amounting to many hundred thousand annually, after the first eight or nine years, would not only benefit the planters by the large sums which they would receive for them, (and which may here stand for the interest of the money expended in planting the trees, and in repairs, &c.), but also prove of immense service to the agricultural interests of the Hebrides by supplying them with abundance of timber. Houses, office-houses, cottages, inclosures, boats, implements of husbandry, fuel, and, in short, every article of which the deprivation is at present most severely felt, would soon be procured in abundance. Emigration would no more be heard of, because the natives would have abundance of work and regular employment at stated wages, and consequently of wealth. Roads would be opened up in every direction to the principal harbours in the vicinity of the different plantations; and a basis would be laid for making us for ever independent of foreign countries for timber for our navy. We are not so sanguine as to believe that this could soon take place, but we maintain that a *basis* would be laid for it. The opposite mainland coast of Scotland, (a stretch of 1200 miles along the sea-mark), from the Mull of Kintyre to Cape Wrath, would soon follow the example of the Hebrides in those sheltered parts formed by the inlets of the sea, which are so numerous on that coast; and their proprietors would find no perceptible defalcation

defalcation in the rents of their sheep walks and other farms from the measure. There are about half a million of acres of this description in Argyle, Ross, and Inverness-shire, without having recourse to Sutherland, where harbours are not so plentiful and safe*.

Let

* We are perfectly aware that suggestions of this nature will be deemed visionary and extravagant by many of our readers, and that they will call out for facts instead of calculations upon the subject. It is fortunate that such facts may be adduced in abundance. One may suffice, and it refers to poor soil in a part of the county of Argyle, which of all those of Scotland possesses the most valuable islands. In 1751, the valued rent of all the park lands about Inverary, consisting of $12\frac{1}{4}$ merk lands, was L. 50. Sterling. Some hundred acres were planted gradually, until the three or four thousand acres now under wood were finished. The expence of inclosing and planting is not precisely ascertained, but is not believed to have exceeded L. 20,000. Mr Knox, the celebrated traveller, reckoned these plantations, in 1786, at two millions of trees, worth 4s. each, or a total sum of L. 400,000 Sterling†. The account stands thus :

Plantation Dr.

To L. 50 sunk for 35 years	-	L.	137	10	0
— L. 20,000. with interest for ditto			55000	0	0
— repairs, dressing, &c. &c.	-	-	50000	0	0
<hr/>					
Sum total of expence	-	L.	105,137	10	0

† Vide Report of Argyleshire and Knox's Tour.

Plantation

Let it not be objected to this plan, that Scotch plantations are inexpedient, because England contains vast tracts of inland wastes and mountains, better calculated both in point of soil and climate, for being converted into national forests, than the more northerly and more exposed regions under review. There are two insurmountable difficulties to be removed with respect to the English wastes. 1. They are too far from the sea, which makes the carriage and export of wood so very expensive as to run away with the profits. 2. They are too high above the level of the sea, and generally of too bad a soil for the vigorous growth of valuable timber. Besides these *incalculable* disadvantages, they would cost infinitely more to purchase and to inclose them (perhaps ten times the sum per square mile,) than the same extent on a sea-shore, and in the situation of the Hebrides and opposite mainland. We are not, however, by any means of opinion, that the English wastes, especially those of Cumberland, Westmorland, and North Wales, are unsusceptible of immense improvement by being inclosed and planted. On the contrary,

Plantation Cr.

By 2,000,000 trees at 4s.	-	L. 400,000 0 0
— thinnings, equal to purchase money of the		
land, and all incidents not mentioned on		
the Dr. side		

	-	L. 400,000 0 0
		105,137 10 0

Duke of Argyle's clear profit on his Invera-

ry plantations	-	L. 294,862 10 0
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contrary, we hope that their proprietors will speedily commence such improvements, and carry them on with energy. They themselves and the nation will soon see the good effects. Meanwhile, we leave the consideration of what profits may arise from woods and plantations in them to those who report to the Board their agricultural state, and who are more competent judges of their condition than we can pretend to be; and only add, that the subject on which we have hazarded the above observations merits the attention of every good Briton by its utility, and the most serious consideration of our legislature by its expediency and importance.

SECTION IV.—TIMBER.

1. *Scarcity*.—The timber of shipwrecks, vulgarly called a *Godsend*, is the only species within the common Hebridian's reach *. Even this resource is of late

Z

years

* The following was part of the prayer of a worthy native of Barray, for half a century: His son still lives near Keesamul, in that island,—“ Mas fheadar gun thèid luigis a'dhith; O Thighearna, stuir usa a fiodh s'an cainb gu tràigh

years become precarious, because wood is so scarce and valuable over all Britain, that the proprietors and their agents look sharply after every stick that is cast upon the shores. In justice to the poorest people in the Hebrides, we must also remark, that they are distinguished by humanity towards such unfortunate seamen as are cast away, or get aground on their coasts; and very frequently exert their utmost efforts to get off vessels, of which they would otherwise share the timber among themselves. And in this humane labour we have often seen them successful, and almost always ungratefully treated both by the owners and insurers or underwriters of the vessels which they had saved.

As an instance, among thousands that might be quoted here, of the excessive scarcity of timber in this extensive region, we have seen 10s. 6d. paid in ready money for a pair of bad oars, in the island of Uist; which, in Gottenburg, would have cost 6d. and in Liverpool 4s. The scarcity in some places is such, that poor people are wounded, and sometimes mortally, by the roofs of their huts falling in upon them for want of rafters to support or bind the couples; and scarcely one cottage in twenty has half the wood in its roof which would be requisite for tolerable security and comfort.

But

traigh Bhorbh as caolas Vatersai," i. e. "If ships must at all events perish, do thou, O Lord, guide their timber, with their tackling and rigging, to the strand of Borge and the sound of Watersay." The last mentioned places lay convenient for the pious Barray-man's boats and homes for carrying home the blessing implored.

But it is not only in their houses and agricultural tools and implements * that the great mass of the Hebridian population suffers grievously from want of timber, but also in their resources and energy as a maritime people. In this point of view, *i. e.* as a numerous body of excellent sailors and fishermen, it is the duty and the interest of their country to do all in its power to alleviate their distress. Most of their boats are built by themselves of wood which they purchase from shipmasters belonging to Ireland or the west of England, on their return homeward from the Baltic. We have known them pay to these shipmasters a fat wedder or sheep for a deal not worth above half-a-crown. This would be paying for Norwegian fir at the rate of 7s. or 8s. the cubic foot. In consequence of the want of trade and regular communication with other parts of the kingdom, not only wood, but also tar, iron, and every other sort of material requisite in boat building, is equally high and scarce; insomuch, that a boat built in the Long Island, at the expence of L.20, would not fetch L.8 at Liverpool or Greenock.—And yet such is the difficulty and precariousness of communication, and such the want of commercial capital in the isles, that the poor natives must either want boats altogether or thus build them for themselves.

It were well for the Hebrides if this extreme scarcity of timber was confined to themselves merely, and did not extend to other countries with which they have usually maintained commercial intercourse. The case

* *Vid.* Chap. v. at the beginning.

is very different. Complaints are universal of the increasing scarcity of wood not only in Great Britain, from one extremity to the other, but also in every part of the continent of Europe with which we have access to be acquainted. The price of timber of all kinds is fully doubled in Norway, Sweden, and Russia, (at least on their coasts opposite to us, and furnished with harbours,) since 1795, and it has advanced 50 per cent. during the last four years. In 1806 we had opportunities of seeing various districts of the Austrian, Prussian, and Danish monarchies, and found in all of them dismal apprehensions of an approaching and most alarming dearth of fuel, (which consisted in those countries entirely of wood,) and grievous complaints of the mismanagement and improvidence of their governments in that respect. The difference of prices in the months of December and January 1796 and 1806, in Dresden and Vienna, was no less than as 40 to 75, and it was always increasing. In Salzburg*, the fathom or claf-ter (the usual measure for faggots about five feet nine inches in height and the same in length by three feet in breadth,) of beech, elm, or ash, cost about 7s. 6d. Sterling in 1796, and in 1806 very nearly 14s. In Berlin the difference was equally great; and, in a word, the same calamity seems to threaten the European continent as well as our British isles.

The

* Salzburg is 300 miles from any sea port, and therefore affords a striking instance of the decay of woods, even in the most inland districts of the continent.

The scarcity of timber thus universally felt, is still more disastrous to the Hebrides than to any other part of Scotland, (Shetland and Orkney excepted,) both on account of the difficulty of obtaining supplies, and also of the peculiarly large and frequent demands of the region itself. Its climate, physical properties, and the natural habits and employments of the people, combine to render a perpetual consumption of timber essential to their prosperity, and even to their existence.

In urging the proprietors of any district to plant trees, and to provide against this scarcity of timber, there are several considerations to be always kept in view.

No man of sense will plant arable or good meadow land, further than by giving it hedge-rows, or so much wood as will add to the value of the ground by the shelter and warmth afforded by his plantation. He cannot be expected to throw away present profit and accommodation for a future, distant, and contingent advantage. Nor is it desirable perhaps, on any account, to diminish the quantity of land under regular cultivation in our kingdom. Even when, upon mature reflection, a man of property, in a country so backward as the Hebrides, comes to a resolution of planting, he ought to be on his guard against too sanguine expectations of rapid success in the first experiments which he makes. He will have frequent occasions for contrasting many discouraging realities with the brilliant prospects which calculations upon paper, and even the experience of other persons, had given him. Results widely different from his hopes will encounter his patience and fortitude; and he may sometimes, in a moment of

disgust, execrate the advice and despise the folly of those who prompted him to his undertaking. Unforeseen difficulties come in his way; noxious animals or vermin, of which he had previously no fears, molest and perplex him; and both his friends and enemies, as well as his own servants and overseers, assail him with dubious suggestions, contradictory experiences, absurd insinuations, proposed changes, and perhaps with what galls an improver more bitterly than any thing else, the sneer of ridicule and banter. He who proposes to improve his Hebridian property, by planting trees on those parts of his lands which he may rationally suppose capable of raising them with advantage, must lay his account with all these discouragements. He will of course do well to reflect seriously on his own powers of resistance, as well as examine what has *already been done* in Bute, Islay, Arran, Mull, Collonsay, and Skye, especially in the last mentioned island, (which partakes of the soil and climate of all the others,) before he commences inclosing for his proposed plantation.

The next object of serious reflection is, whether he can conveniently sacrifice some present advantage, and incur a certain expence, and that to a greater amount, by perhaps one-third, than his calculations will make it, for securing, at a considerable distance of time, an addition of fortune to himself or his heirs. This is the grand obstacle to the improvement under our review. There are but few men who have much money to spare, and still fewer whose love for posterity will be found strong enough to persuade them to incur present privations, or to deny themselves such comforts as they
actually

actually enjoy, for the prospect of future contingency to their descendants*.

Whoever surmounts those difficulties, or has some leisure and time at command, and enters with steadiness and method upon a system of planting waste lands in the Hebrides, will however find in the end that he has acted wisely. Land is so cheap and wood so valuable there, that even slender success (comparatively speaking) must ultimately prove highly beneficial to the planter and to his country. His heirs must gain infinitely more than if he had laid out the same sum in adding to the superficial extent of his estate; and every year that they can afford allowing the plantation to grow and to increase, will add prodigiously to its value, both by the augmentation of timber and the progressive increase in its price. Of this increase we may form some idea from the prices of timber at the moment in which this is written (September 1809), and at two other periods within the last 20 years. These prices are furnished by a respectable wood merchant at Leith, the principal port for the importation of timber in the east of Scotland.

* The sentiment of the Irishman influences the planting of trees perhaps more than any other branch of agriculture: "Why should I do any thing for posterity, which has never done any thing for me?"

	In 1789,		1799,		1809.	
	s.	d.	s.	d.	s.	d.
Oak*, per foot	1	9	2	10	4	9
Ash, - -	1	2	2	2	4	0
Elm and Beech	1	2	2	0	3	10
Memel Fir	1	0	2	4	4	6
Common ditto	0	8	1	8	2	8

These are the average prices, but of late we have known 5s. 8d. or 6s. paid for oak, and 5s. for Memel, or even for the best Norwegian fir, while prime timber of different other kinds sold proportionably high. It must not be forgotten also, that the prices in the Hebrides may be fairly computed 25 per cent. higher than those of Leith. Can any further arguments be necessary to induce Hebridian proprietors to exert all their influence for raising wood upon their estates, and for speedily commencing a species of improvement so powerfully recommended by their own best interests, and by the present aspect of Britain and of Europe.

* N. B. Oak bark has risen from L.12 to L.30 per ton.

CHAPTER

CHAPTER XL.

WASTES.



A BRITISH Jeremiah would find ample scope for lamentation over the wastes of his country, in almost every county from the *Lizard* to *Johnny Groat's*. He might join the Israelitish hermit,—“For the mountains
“will I take up a weeping and wailing, and for the habitations of the wilderness a lamentation; for none
“can pass through them, neither can men hear the
“voice of the cattle: both the fowl of the heavens and
“the beasts are fled; they are gone:”—and that not only with regard to the Hebrides, which have for ages been a neglected portion of our empire, but also for a large proportion of many of our finest British provinces. The Hebridian, on being reproached with the aspect of Lewis, Uist, Skye, and Mull, may bid the Englishman look at his own country from Kingston upon Thames
to

to Portsmouth. They will have the comfort of mutual reproaches, and must blush for the improvidence and folly of their countrymen.

By *waste lands*, the reporters to the Board of Agriculture usually mean such as are in an unproductive state, though susceptible of being improved, and capable of producing grass and corn. In this restricted sense, the quantity of waste ground in the Hebrides amounts to about 300,000 acres, or somewhat less than *a fifth* of their whole extent. We cannot, it is true, denominate these *arable acres*, or calculate upon their being easily brought into a state of perfect improvement, so as to yield a considerable regular rent per acre; but they admit unquestionably of great comparative improvement, and therefore merit particular notice in a report of this kind.

SECTION I.—MOORS.

THE appellation *moor* has different meanings in England and Scotland. In the latter, it implies all land covered with moss or heather, which does not come under the description of bog or of mountain. In this sense, moors comprehend at least one-third of the space of ground already mentioned as waste land, *i. e.* they amount

amount to the number of 100,000 acres. This great extent is covered with moss, very coarse grass, or heather of the three different species common in the Highlands and isles of Scotland*, and cannot be valued at above 6d. an acre per annum. Where calcareous manures are applied, the heather and moss disappear, and are supplanted by clovers and fine grasses of different sorts, the seeds of which seem to have lain dormant in the soil, or are conveyed to the ground in a manner totally inexplicable to the common observer. These moors, either in consequence of being impregnated with salts by the sea spray, or of being naturally composed of better soil than the generality of such lands in other parts of the kingdom, yield abundant crops of grass and corn when properly managed, and are vastly superior to the downs of the south of England, and the moors of Yorkshire and of the northern counties of our sister kingdom. They generally possess a sufficient depth of soil, which, after a few years cropping, assumes the appearance, and partakes of the properties, of black loam. Potatoes, turnips, oats, and rye-grass and clovers, thrive astonishingly well in this soil, provided there be free egress for the surface water, and that care be taken to prevent the land from being poached by heavy cattle during the first half dozen years of cultivation.

SECTION

* *Erica vulgaris*, common heather; *erica cinerea*, bell heather; and *erica tetralix*, rinse heather.

SECTION. II.—MOUNTAINS.

THE word *mountain* is, like most other terms connected with topographical nomenclature, of very arbitrary acceptation in all parts of the world. Persons who are accustomed to a champaign country, regard every eminence as a hill, and every hillock as a mountain; while those, on the other hand, who have from their infancy been intimate with Alpine scenery, carefully avoid this confusion and exaggeration, and convey to us, in precise language, an accurate idea of the object in question. The English tongue, being moulded by a nation dwelling in a flat country, possesses very few terms for conveying definite notions of elevated grounds. Hillock, hill, and mountain are almost all that we are familiarized with; while the different gradations of these, as well as the appearance of the grounds which connect or separate them, are couched in words extremely vague, feeble, and indistinct. In Gallic the case is very different. The words *montich*, *sliabh*, *aonach*, *gleann*, *coirre*, all connected with such lands as in England and the lowlands of Scotland are called by the generic name of *moor*, are familiar to every Highlandman's ear; and so are the expressive terms applied to hills and mountains, *cnoc*, *mcall*, *mam*, *bruach*, *leittir*, *ardoch*, *beinn*. These admit not of translation into English, but are admirably calculated for giving to a native the most precise and accurate notions of the various kinds of ground to which they

they are applied. Of the last mentioned seven there is a superficies of about 120,000 acres in the Hebrides, which may be deemed incapable of improvement in any other way than by sheep-grazing, and plantations of hardy trees. Sheep-grazing is known to improve the quality of grasses, and to banish heather from mountainous districts; and we can already trace these effects in many parts of the mainland of Inverness-shire, Ross, and Argyle. Very little of the mountainous parts of the Hebrides can be transformed into corn land, nor is it perhaps advisable to attempt any white crops at all in them. Potatoes and grasses are however found to thrive extremely well in such places as are somewhat sheltered from the western winds, and accordingly constitute their principal produce.

1. *Present value.*—It is impossible to give any accurate estimate of the value of Hebridian mountains per acre. Some of them are worth from 1s. 6d. to 2s. of yearly rent, while others, such as those of Jura, Harris, and part of Lewis and Mull, are not worth a farthing. The improveable parts, with which alone we have at present to do, if compared with other grazings in this extensive region, may be valued at 2s. 6d. per acre; and by inclosing and top-dressing the grazing parts, and by planting the steep declivities, might soon be raised to from 5s. to 20s. or even 25s. of yearly rent.

It is unnecessary to enter into any details concerning their improvement; for the same arguments which we have adduced under the last chapter on woods and plantations apply equally here. Nothing worth mentioning has hitherto been done, excepting by the few gentlemen

gentlemen whom we have named ; and many years will probably elapse before the waste mountains of the Hebrides shall exhibit any favourable symptoms of industry and improvement.

SECTION III.—BOGS.

It is not easy to determine when bogs can properly be called irreclaimable ; and consequently the quantity of ground of this description, and also of such as are improveable, and come under our present review, is, in most of the isles, merely a matter of conjecture. There is however no doubt, that above 80,000 acres of easily improvable bogs might be shown in the Hebrides ; and which, merely by inclosing, partial draining, and judicious pasturage and cropping with oats and potatoes, would yield more than ten times their present rent in a very short space of time.

SECTION

SECTION IV.—FENS AND MARSHES.

THESE, as well as *forests*, *heaths*, and *downs*, may be classed along with the three preceding subdivisions of waste lands, moors, mountains, and bogs; for in the Highlands and Hebrides, they are (*excepting downs*) reckoned the same, and named indiscriminately either way according to the pleasure of the speaker.

Of the last mentioned description, viz. *downs*, there is indeed a considerable extent in the Hebrides, which, if well managed, might prove exceedingly useful to several valuable districts in the winter season. But in consequence of the demand for ropes and sacking, and of the great scarcity of straw for thatch and other purposes, the coarse grasses and ling or bent which grow on those downs, and which, if only depastured, would render the surface of the sandy banks that produce them firm and steady, are cut or rather torn off from the thin skin of the soil; and sand-drift, and extended desolation is the consequence. The case is still more deplorable when these downs are ploughed up and scourged by a succession of white crops for a series of years, as is often the case. Their vicinity to the sea shore and to sea weeds for manure, and the facility of ploughing them, is an irresistible temptation to the poor Hebridian, whose misfortune it too often is to prefer a bad crop of corn to a good one of grass, and to lose five or six years of pasture for one miserable crop of oats or barley,

barley, which, towards the end of his series, though stimulated with a profusion of manure, is so foul and wretched that it rarely exceeds three or four bolls of grain per acre. Of such downs, vulgarly called *machir*, there are, in the Long Island, Coll, Tyree, and Collonsay, upwards of 40,000 acres, which are now frequently worse than nothing, and rarely worth 1s. per acre; but if top-dressed and laid down with clover, or even protected in the latter end of autumn from the depredations of unskilful pilferers of *bent* and *ru* (*galium verum*), and those of cattle, would be worth 12s. or 13s. an acre for winter and spring foggage. They are generally the decomposition of granite; and, though sometimes mixed with shelly-sand, are not naturally fertile.

1. *Present state and value.*—While it must be confessed that, upon the whole, very little has been done, in the general run of the Hebrides, towards the improvement of the very large proportion of their surface which the description under our immediate review comprehends, we are at the same time happy to point out some instances of very laudable industry, and a few of astonishing exertion. In Gigha and Collonsay, the present proprietors can exhibit a dozen fields of considerable extent, now fruitful, verdant, and arable, worth L.2 per acre per annum, which they have reclaimed from what was once thought the most hopeless state of barrenness, at an average expence of L. 10 an acre. Of these some were peat bogs of great depth, such as the large meadow north-east of Killoran house in Collonsay, and the (*now*) beautiful level field near the southern extremity

extremity of that island, opposite to Oransay, and several other portions of the same estate; the two extensive parks to the east and north of Gigha house, and various fields through that fine island. Some parts were so rugged, and so encumbered with large stones or rocks, &c. that it required all the activity and courage of those enlightened gentlemen to venture upon them. They are now so much good land added to the estates, and reflect honour upon Hebridian industry and vigour. Mr Campbell of Shawfield, always exemplary in every thing which tends to the good of his people, has shut out the sea from upwards of 400 acres of level land in *one* part of Islay; and made what was lately a precarious salt marsh, and covered over by every spring tide, a sheet of arable land of the most valuable quality. In no part of Britain have we been more pleased with the sight of any agricultural improvement. But this is not the place for a particular description of this gigantic Hebridian exertion; and we accordingly pass it over by merely remarking, that it has reclaimed hundreds of acres from the dominion of the Atlantic, in a situation where that element is usually clothed in his sublimest terrors.

Mr Campbell of Ballinaby has improved a considerable extent of hard hilly ground (which was for ages in a neglected condition), by means of a very arduous species of aration, and with the help of shelly-sand and other manures, to five times its former value. He has also succeeded in draining and improving some deep peat mosses, so as to yield good crops of corn and hay; but he thinks that the hard ground, in nine cases out of ten, affords a better subject for the agriculturist's

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ameliorating system than any deep bogs whatsoever. His reasons for such opinion he stated in a perspicuous and plausible manner, and they may perhaps have some effect upon the speculations of future improvers. 1. The original expence of draining deep bogs, previously to their being fit for the plough, is almost always so considerable as to deter people of slender means from interfering with them at all in the Hebrides; and what is worse, this draining expence, from the nature of the soil, annually recurs. Ditches and drains must be not only cleaned, as in hard ground, but in a manner renewed *in toto*, otherwise the whole expence already incurred is so much money cast away into the bottom of the moss. In hard ground, on the contrary, such drains as are once judiciously made, remain for years useful, requiring only some partial clearings and a few insignificant repairs; and, at an average, are charged at no more than one-third of what the deeper and broader drains in deep bogs usually cost. 2. During the process of reclaiming deep mosses, cattle and sheep must be kept at a distance, lest they should poach the ground or injure the drains; and accordingly the grazing of such ground is completely sacrificed; while hard hilly land, during the same process, admits of uninterrupted pasturing, and yields each day of the continuance of its improvement a better and larger return to the occupant. 3. Hard ground once reclaimed is gained for ever; but deep mosses must be perpetually watched, and, like persons of sickly constitutions, who change their abode, run a risk of perishing in consequence of the slightest accident or mismanagement. 4. Deep bogs must not be ploughed without the nicest attention to the state of the
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the weather; and they cannot, with propriety, be depastured by heavy cattle or by horses; while, on the other hand, hard ground is accessible, in those respects, at every season and in all circumstances. 5. The productions of the field can be conveyed to the farm-yard, and manures of every kind can be carried to hard grounds, with infinitely less trouble and expence than to soft mosses. And, 6. and lastly, Cattle and sheep can lie down and sleep, comparatively sheltered and comfortable, on a hard or rocky bottom, while they can never think of resting on the spongy surface of a peat bog.

These views he did not urge as arguments to discourage any improver, or to deter him from reclaiming even deep peat bogs in certain situations; on the contrary, he himself has set a good example in that respect, by improving many acres of very deep moss, which now yield luxuriant crops of corn, potatoes, and hay; he meant merely to prompt to the improvement of those tracts so frequently and shamefully neglected in the Hebrides, which usually lie between what is called the infield and the head-dyke of most of the farms; and for that purpose recommended the reclaiming of them even in preference to what has of late years been so successfully and extensively carried on in cases of deep and level mosses.

The vicinity of Bowmore in Islay displays an encouraging and agreeable prospect of bog improvement. Upwards of 300 acres have been there reclaimed within the last 25 years, which, although not worth a groat an acre when the village was begun, would now let at L.2. 10s. or L.3. It would be tedious to mention all who

have carried on improvements of this description in Islay, and who have followed the advice and example of the principal proprietor, as well as of Mr Campbell of Ballinaby; but it is our duty to name some of the foremost improvers. Mr Macgibbon, though prevented by other avocations from residing in Islay during the whole year, carries on the improvements in question with much success. Mr Campbell of Ardmore, one of Shawfield's gentlemen farmers, has recovered from the sea, a little to the southward of his house, several acres of salt marsh, by means of a stout dyke of stone, faced with sod, and furnished with a flood gate, which permits the back-water to escape at ebb, but shuts itself against the flood-tide, and protects a pretty large plain from being covered at high spring tides to the depth of six or seven feet by the ocean. This is a miniature of what his constituent has done on a large scale at Loch-Gruinart. Major Mackay, Dr Crawford, Mr Campbell of Ardnahow, Captain Macneill, the minister of the parish of Killarow, Mr Simpson merchant in Bowmore, many other gentlemen, and almost all the tenants of Bowmore and Portnahaven mosses, have of late shown great activity and judgment in this species of improvement. The common, though not the universal plan in Islay is, to commence with draining and ditching, trenching, and planting potatoes. Dung and sea weeds, or a compost of moss, dung, and calcareous matters, are the ordinary manures. The first crop is sometimes followed by a second crop of potatoes, but oftner by barley or oats, or flax with grass seeds; after which two hay crops are taken, and then the land is opened up for a
renewal

renewal of the same rotation, or is left in a lea state for some years in order to consolidate the surface.

Similar improvements have been carried on at Tobermorey in Mull, and near Stornoway in Lewis, and would unquestionably be prosecuted with ardour and success in the vicinity of villages and sea-port towns, were long leases or feus granted to the inhabitants; and this, as we shall have occasion to state in another chapter, yields a strong argument for the establishment of villages on the most liberal principles of permanent agricultural advantage.

What has been done in the Northern Isles is inconsiderable in proportion to the industry of the people of Islay and the Southern Isles already mentioned; but yet some names deserve mention, as examples to others: In Skye, Mr Mackinnon of Corry has reclaimed a large extent of the most uninviting ground, and brought it to bear excellent green and white crops. He has made use of marl and lime as manures, and has effectually reclaimed many acres of land formerly not worth 6d. an acre, to be so serviceable to his farms that he would now refuse two guineas for each acre during the currency of his lease. In his neighbourhood, Mr Macdonald of Scalpay has for several years past been assiduous in similar improvements, and has made the portion of that island which lies near his house of ten times the value which a jury would have set upon it twenty years ago. Colonel Macdonald of Lyndale had, at an early period of his life, the merit of commencing the improved husbandry in Skye, and continues still to carry on his operations with much spirit and success. He has reclaimed 40 acres of deep and rugged moss, and has also, as well

as the two last mentioned gentlemen, paid attention to the planting of trees, inclosures, and draining, as well as to the selection and rearing of the best breeds of horses and of cattle. He built the first threshing machine in Skye; introduced the modern mode of ploughing with two horses, without any leader but the ploughman to guide them; made the first regular stone fences; and, in short, has always been conspicuous for energy and activity in promoting the best interests of agriculture and of rural economy in the district to which he belongs. Mr Campbell of Kingsburgh and Mr Campbell of Duntulm carry on a good system of husbandry on their respective farms. They had some of the finest fields of turnips, raised on land newly reclaimed, which occurred in the whole course of this survey; and are fairly entered upon what is a novelty in the Isle of Skye, — a regular and systematic rotation of green and white crops.

One of the most successful improvers of moss land is Captain Cameron of Lochmaddy, Lord Macdonald's chamberlaine in North Uist. The present *state* and *value* of what land he has reclaimed may serve here as a specimen of what may be done by industry and good management even in the most remote situations in the Hebrides. *He has, at an expence of L. 150, improved ten acres of bog not previously worth a penny an acre, to the value of L. 2. 10s. an acre per annum, or to a cumulo value at 30 years purchase of L. 750. Sterling!* The *data* on which this is founded shall be given in their proper place. In the same island of North Uist, Mr Macdonald of Balranald and Mr Maclean of Boreray have displayed a good deal of perseverance and spirit

rit in improving marshes and bogs; and so has Mr Campbell of Ensay in Harris, and Mr Chapmann near Stornoway in Lewis.

It is impossible to state with precision the *present value* of the lands thus reclaimed; for an acre of good, arable, and easily managed ground is of more importance in this part of the empire, than any rents hitherto paid for land in the Hebrides would warrant us to imagine. But we certainly do not appreciate it too highly when we fix the average value at 15s. an acre. The circumstance which renders the discussion of this matter important is, the contrast between the former and the present value. It must always be remembered, that marshes and bogs in the Hebrides differ very essentially in present value from those of England or the south of Scotland, where they are turned to considerable account in raising reeds, willows, bulrushes, &c. so as to approach nearly in rent to their extent of improved land; whereas these wastes in the Western Isles are completely lost, or even pernicious to the farms which they encumber, by destroying weak cattle and horses which attempt to pasture on them. The difference of their former value and that of their present improved state may, without exaggeration, be stated at *one to twenty*, or even *one to twenty-two* at a general average. The expence of improving bogs and marshes, &c. it is impossible to ascertain per acre, as it varies on every farm, and even on the same farm, and in the same field, according to a thousand different circumstances of soil and local situation. In general, it rarely exceeds L. 10. or L. 12. per acre; and sometimes the *two first crops* pay the whole expence.

Here we need not dwell upon the causes of that apathy and improvidence which prevent so many hundred thousand acres of reclaimable land from being improved for the benefit of our country. The same arguments which we would urge have been bandied about for ages ; and until the efforts of enlightened patriots, and the illumination which the institution of a Board of Agriculture is calculated to pour over our kingdom, shall have roused both landlords and tenants to a full conviction of their joint interests, we can expect very little good to result from the calculations of experience or the suggestions of prudence ; and we shall continue to meet with the same apology from tenants for poverty and indolence in the Hebrides, as we do in Cornwall, Derbyshire, and Ireland,—“Tis not our fault that our wastes are unimproved ;—Give us feus or long leases, and melioration for what we do, and you shall see no more wastes in the Highlands than you do near Edinburgh or Glasgow.”

CHAPTER

CHAPTER XII.

IMPROVEMENTS.



SECTION I.—DRAINING.

NEXT to roads and inclosures, draining is the most necessary improvement in the Hebrides, but unfortunately very little attention has hitherto been paid to it. Neither grass nor corn can thrive on a wet bottom; and such quantities of both as may with great difficulty be raised, must be of bad quality and late in harvesting. The effect of manures, of whatever description, is also lost upon such soils, and they cannot possibly be dressed in any respect in a proper manner. So sensible of this are the best Hebridian farmers, the proprietors of Islay, Collonsay, and Gigha, that they have, for several years past, carried on a systematic plan of draining

ing their estates at a very considerable expence, and exhibit that species of improvement in as high perfection as any agriculturists in the kingdom.

The larger isles are, at certain seasons of the year, annoyed by such tremendous deluges of rain, that the surface water furrows and tears up the best fields in a cruel manner, and the largest open drains can scarcely contain the overwhelming torrents: Covered drains or sivers are entirely out of the question. In consequence of this inconvenience, many farmers despair of doing any good to their lands by draining, and therefore content themselves with helping the waters to as smooth and uninterrupted a course or passage as they can, hopeless of deriving any benefit from opposition or restraint. To persons in this situation, the minor scientific modes of draining are of secondary importance, however useful and proper these may prove in other cases; and they cannot make any progress in the great improvement under review, without having recourse to fencing their drains and the divisions of their fields with suitable bulwarks against the floods, as is done in other parts of Europe, such as Styria, Carinthia, and Switzerland, which are frequently visited by similar inundations. In those countries, the drains, on sloping grounds near the sides of mountains, are built with stones or wood at the sides and bottom, and strong posts of the same materials are driven into the banks for the purpose of strengthening and consolidating them. Stones are abundantly plentiful in the greater number of the Hebrides, but there is such want of wood that the Styrian and Carinthian modes cannot soon be adopted; and therefore we proceed to the different

ferent subdivisions of this section, on which any thing worth notice occurs in the Hebrides.

1. To any person acquainted with the surface and climate of these isles, it must be sufficiently obvious, that Mr Elkington's boring process for removing latent water, or rather water which, though palpable enough in its effects, is not always easily traced on the surface, does not admit of application in this district: And accordingly we do not enter upon the description of it, which occupies considerable parts of so many other agricultural reports.

2. *Open cuts.*—These will always constitute the main part of Hebridian draining*. They may frequently

* Dr Walker's advice on this species of Hebridian improvement may prove useful in many cases.

"There is a simple and easy operation, not generally practised, which ought always to be performed previous to the draining of any land whatever.

"Before any attempt is made to drain a field, it is certainly of consequence to be as well informed as possible concerning the state of the water under ground. The easiest and the most effectual way for this purpose, is to dig a number of small pits, about three feet deep, in different parts of the field. These should be suffered to remain open for a whole year.

"By these pits the depth of the soil and the nature of the subsoil will be exposed to view.

"They

ly be contrived so as to combine the benefits of inclosure and draining, and in fact are so made in several parts of Islay and the southern isles. An open cut in moss is of no essential use, unless it be deep enough to reach the substratum on which the moss rests, and unless the slope be such that the sides run no risk of falling in during the first year after its construction. A drain of this description, which is six feet deep, (as principal or *mother* drains commonly are,) ought to be two feet and a half broad at the bottom, and 14 feet broad at the top. In very wet and spongy peat mosses the slope must be still more considerable. We have never met with any man who said, that he repented for having made his drain too wide or too deep, but, on the other hand, with many who were obliged to widen and deepen their drains at an inconvenient season of the year, for having at first neglected to make allowance for the nature of the ground in which their operations were carried on. An open cut in *till* or *clay* must

“ They serve also to show, whether the water passes between the soil and the subsoil, or rises and pervades the soil from a greater depth.

“ It will then also be seen how near the under-ground water reaches to the surface, and at what height it stagnates in the different seasons.

“ These are important points of intelligence to be gained, before the operation of draining is begun. They are obtained by what can scarcely be called any expence, and must be of great use to direct the operation of drains in a proper manner.”—Vid. WALKER'S *Hebrides*, vol. i. p. 206.

must be made quite through those strata until the substratum of gravel or of sand shall be attained—otherwise the tenacious nature of the superior stratum will make the drain of no effect, further than merely for the small spot immediately contiguous to the cut. It rarely happens in the Hebrides, that any stratum of stiff clay or till exceeds a yard in depth, and therefore draining is comparatively easy; but should it exceed that depth considerably, the expence of cutting the drain will be amply made good by the advantage which must result from it. The smaller drains, intended to run *covered-in* into the large open cut, will also, in every case, need to be cut quite through the clay or till in like manner, and not, as is often practised by superficial improvers, run merely deep enough to allow the plough to pass over them. Great care is taken, by the best Hebridian farmers, that their drains are not permitted to lodge stagnant water, but convey all the moisture which flows to them into some running stream or to the sea shore. For this purpose they are at particular pains in taking proper levels, and in securing for the water at least one foot in two hundred of descent, wheresoever the nature of the ground can possibly admit of it; a moderate slope is much better than a rapid and precipitate course, for very obvious reasons, and should therefore be studied by every practitioner. The prices paid for drains of this sort vary in the different isles. They are not, however, very high, seldom exceeding 10s. the chain of 74 feet, running length, and being often so low as 7s. or 8s. Some extra allowance is made of course for such drains as require blasting with gun powder, or are attended with particular


cular difficulty or danger. The largest open drains in the Hebrides were made by Mr Campbell of Shawfield in Islay, for diverting the course of the stream which discharged itself formerly into Loch-gruinart, but now runs into Loch-in-daal by the open cut lately made for facilitating the improvements carried on at the head of Loch-gruinart. The islands of South Uist and Benbìcula contain also some drains carried on both by the grandfather of the present Mr Macdonald of Boisdale, when he had the management of the estate of Clanranald, and by Mr Nicolson of Ardmòre, and Mr Brown factor for Clanranald of late years. The two last mentioned gentlemen have made an open cut of three miles in length, mostly through the bottom of drained lakes and marshes, and furnished with bridges and a flood-gate of considerable dimensions, at a very heavy expence, and drained about 300 acres of arable land, besides opening a communication between different parts of their grounds which were formerly cut off by water from that advantage. Mr Macdonald of Balranald has made a drain partly through solid granite, and partly through a deep morass, through nearly a mile of his farm in North Uist; and many other spirited and intelligent men are following the good example. It is, however, much to be regretted, that the proprietors have hitherto manifested little inclination to prompt or even to second the efforts of their tenants in draining on this plan; for, as far we could learn, no leases (excepting those granted by Mr Campbell of Shawfield in Islay, who is in this, as in all other matters connected with agricultural improvements, in the highest degree exemplary) contain any stipulations for reimbursing tenants

tenants at the conclusion of their leases, or for encouraging them in any other way to prosecute so essential a species of improvement. A fair average price for such drains would be twopence the cubic yard, where the ground presented no serious obstacle, and a comparative rise in proportion to what a labourer might be able to accomplish in ground of a different description. The tenant may of course be bound to clean and to keep in repair such drains at his own expence.

The quantity of rain that falls in the Hebrides, and the number of springs which are to be found in almost every field, prompt to the liberal extension of open cuts. Every field would require at least two of them; one to keep off and lead away the waters which run down from higher grounds, and the other to receive the contents of the collateral and smaller or covered drains necessary to carry off the water from the lower parts of the field, and also to prevent the superfluous moisture of the ground in question from injuring the adjacent grounds. Particular attention should be paid while planning the inclosures and subdivisions of farms, to arrange them so that the open cuts may serve the double purpose of drains and fences at the same time.

3. *Hollow drains.*—These can only be used with advantage on the more level and in the smaller Hebrides. It is now pretty generally acknowledged, that hollow drains ought in every instance to be preferred to those which are filled up entirely with small stones or any similar substitutes; because the former, if properly finished, will last for generations, while the latter are generally useless, and must be renewed at the end

end of half a dozen years. The best and most approved form in the Hebrides is the triangular, with a roof of flat stones laid horizontally, and some brushwood, heather, straw, furze, or other durable substance penetrable by water, but preventing earth or sand from falling in, immediately above the flat stones, and supporting the stones and earth which are used for filling up the ditch after the construction of the drain. The

form is nearly this  and the current running constantly, and sometimes with considerable force, at the angle formed by the two stones at the sides, with the one at the bottom A, prevents any earth or sand from lodging there or choaking up the drain, as would be the case if we reversed the figure, and made the passage, like those of many practical drainers, narrow at the top B, and broad at the bottom. The great danger of broad-bottomed covered drains being stopped in consequence of the feebleness of their current, is a sufficient reason for exploding them, excepting in cases where the water has a rapid descent, or always flows in a considerable, and equable current. The broad-bottomed are indeed easier to build, and apparently stronger in fabric; but, if proper attention is paid to the narrow and angular bottomed, they will last longer than the other, and run no risk of stopping by the deposition of sand, gravel, or earth that may pass to them either from the surface or from the higher grounds.

1. *Depth.*—The depth of hollow drains must depend entirely upon local circumstances, and cannot possibly

sibly be fixed without a minute inspection of the soil and situation in which they are to be made. In the Hebrides they must generally be both deep and capacious; rarely nearer than two feet to the surface, or less than six square inches in dimensions of water course. On most of the improved islands they are frequently four or five feet deep, and from 8 to 12 inches in depth of water passage. With respect to the manner in which *they are filled*, their *expence, effect*, and *general benefit*, nothing particular occurs to us in comparing Hebridian hollow drains with those of other districts of the kingdom. We have already dwelt at some length upon the advantages derived from reclaiming waste lands in this region; and it is enough to say that, without draining, both by open cuts and by hollow conveyances, this object cannot possibly be attained. Nor can the first and grandest of all Hebridian improvements, namely the planting of trees, be judiciously attempted without carrying on draining at the same time with it, at least in as far as the most valuable sorts of forest trees are concerned. The instrument which we have described in chapter v. called caschrome, is of singular use in the first operation of hollow draining; for it enables the operator to cut up the toughest and most rugged sward with much greater ease than he could do by the aid of any other tool (not even excepting the Essex spade) with which we are acquainted, and it is also peculiarly well adapted for making surface or furrow drains which communicate at the higher parts of the fields with the open cuts, or some of the hollow drains that empty themselves into them. We conclude this section by urging the farmers of

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Mull, Skye, and the Long Island, to follow in this, as in many other things, the laudable example of their countrymen in Islay, Gigha, and Collonsay. In Islay we found even the small tenants of some farms, especially those of the beautiful ones of Kilchiaran and Octomore, busy at their drains, and evidently masters of the operation in which they were engaged. One of them said in Gàlic, with some spirit, "Our landlord (Shawfield) is a great drainer himself, and we must not throw *cold water* on any thing that is his, although we should drain our pockets by draining his lands."

SECTION II.—PARING AND BURNING.

THIS mode of improvement, as it is called or mis-called, was anciently in general use through Scotland. It was a lazy way of forcing the surface into a temporary fit of fertility, at the expence of its after substance; and is accordingly discarded by the best farmers in our best cultivated counties in this part of Britain. In England, indeed, the practice may be deemed, *a priori*, less objectionable than here; because the surface of waste lands there is more matted and more encumbered with redundant vegetation, and consequently requires some process by which a passage can be opened for the plough, as well as a medium obtained for destroying

trying the tough roots of brushwood, strong grasses, and weeds which compose the general surface of their soil; while we, under a fainter sun, and with a less exuberant power of vegetation, require no such aids. Without, therefore, condemning in others a practice which we have found inadvisable among ourselves, and without denying the usefulness of ashes as a manure, and the practicability of getting at a subsoil more adapted to tillage than the surface of English waste grounds, we have no hesitation in stating that *paring* and *burning* will not probably soon become more popular in the Hebrides than that method is at present; and that very sensible farmers among us have given it as their opinion, that the man who kindles a fire for that purpose deserves to be himself a part of its fuel.

SECTION III.—MANURING.

FROM the great difference of the causes which influence the productiveness of lands, it is obvious that, in the present state of science, no certain system can be devised for their improvement, independent of experiment; but there are few cases in which the labour of experiments, and even of analytical trials, will not be amply repaid by the certainty with which they denote

the best methods of melioration; and this will particularly happen when the defect of composition is found in the proportions of the primitive earths. Such defect is remedied by manures. In supplying animal or vegetable manure, a *temporary* food only is provided for plants, which is in all cases exhausted by means of a certain number of crops; but when a soil is rendered of the best possible constitution or texture, with regard to its earthy parts, its fertility may be considered as permanently established. It becomes capable of attracting a very large portion of vegetable nourishment from the atmosphere, and of producing its crops with comparatively little labour and expence.

Whether ordinary manures promote the effect of improving the soil for producing crops of corn, grass, or vegetables of any kind, by enriching it with new materials, by acting as stimulants, by dissolving or combining vegetable substances already lodged in the ground, or by attracting fertilizing particles from the atmosphere, are questions of curiosity for the philosopher rather than of utility for the farmer. The latter is indeed deeply interested in the discussion of the relative natures of particular manures, and of the soils to which they are intended to be applied; but he seldom feels any inclination to pursue his inquiries or observations farther: and even on this essential point we frequently find his practice and his reasonings at variance. In the extensive region to which this report particularly refers, nothing is more common than to see manures used in the most unskilful and barbarous manner by persons who are not only sagacious and rational in other respects, but who also reason very plausibly

sibly upon the abuse in question. They load their sandy and gravelly fields, year after year, with seaweeds, extort foul and stunted crops of barley or oats, and at the same time confess that the land is exhausted by this constant repetition of strong stimulants, and does not yield half the returns which it would give were they to indulge it occasionally with fertilizing manures and a proper rotation of grasses and green crops. They excuse their mismanagement by the miserable apology, that their leases are short, their quantity of arable ground small, lying contiguous to the sea shore, and to this stimulating and scourging manure, and that therefore they prefer reserving their richer manures and restoratives for other land, which, without them, would produce nothing, while the land alluded to produces two or three returns in spite of all their bad treatment of it.

But as even in the Hebrides, backward as agriculture must be allowed to stand at present, some judicious practices are found to exist; and as some of these isles are infinitely farther advanced than others in the judgment and industry which they display in the selection and use of manures, and may perhaps persuade their neighbours to adopt similar habits, it is proper to enter into some details on a subject so confessedly important to the district.

Manures may be very aptly divided into two classes, the *natural* and the *artificial*. No portion of the British Empire is so richly provided with the former, or so poorly with the latter as the Hebrides. We shall take them in the order recommended by the Honourable Board,—and state, without much deference to au-

thorities from other quarters of the kingdom, what we have ascertained as facts, either from personal experience or undoubted testimony, in the course of traversing the Western Isles.

The natural manures used in the Hebrides are,

1. *Marl*.—Of this valuable species of manure we found three distinct kinds in the Western Isles, viz. *Shell marl*, *rock marl*, and *marble earth* or *marble marl*. *Shell marl* abounds in Islay and Lismore, and proves a very cheap and most excellent manure. It is used injudiciously in the last mentioned island, by farmers who are tempted, in consequence of the goodness of the crops which they raise from it, to repeat a series of white crops on the same fields, until what might have added immensely to their fertility, proves in the end their utter ruin. The best use of shell marl in the Hebrides, would be to employ it as top-dressing for grass fields. It would extirpate heather and sprets, and replace them by the finest and most luxuriant white clovers and other valuable herbage. It is probable that shell marl might be found, if carefully looked for, on all the larger islands. The snails, from the shells of which it is formed, are met with in many of the stagnant waters. In Islay it occurs a few miles from Portascaig, in strata of from three to six feet thick, covered with some feet depth of peat-moss. It is the purest and the strongest of all the calcareous earths *, and applicable to a greater variety of soils and situations than any

* Vid, Walker's Hebrides, vol. i. p. 141.

any other manure. It is not, however, as yet turned to great account in the isles, and therefore cannot be recommended by the experience of a considerable number of persons who have employed it on their lands.

Rock marl.—Rock or stone marl is found in inexhaustible quantities in the valley between Portascaig and Bowmore in Islay; and, like every other natural advantage of that fine island, is gradually becoming an object of useful attention to the inhabitants. It is easily dug, is richly impregnated with calcareous earth, and falls into powder on exposure to the air. These properties render it extremely valuable. It occurs also in Lismore, Tyree, Coll, and in Troternish in Skye. In no island however has it hitherto been used to any considerable extent, excepting Islay and Lismore.

Marble earth * is found near Gilchrist, in the district of Strath in Skye, in vast quantities; and is, on clay and mossy soils, an excellent manure. Mr Mac-kinnon of Corry, already mentioned, has used it in considerable improvements made by him lately on deep and rugged mosses or bogs, and it promises to become a valuable acquisition. In no other part of the Highlands or Hebrides has this species of marl been found so easily accessible, or indeed discovered of the same quality; so that little can be fairly concluded from experiment with regard to it. Marl in general acts as a fertilizer and a stimulant at the same time; but the far-

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* *Parætorium album* of Dr Walker.

mer must calculate before laying it on his land, upon finding its effects different from those of lime, with which it is usually classed. It is slower and more gradual in its operation. Sometimes a year or two elapses before any perceptible difference is manifested by the vegetation of the soil to which it is applied, and sometimes an apparent deterioration ensues. Let not these alarm the agriculturist. They are the consequence either of a slow and suspended fermentation, or of a temporary struggle between the marl and the host of foes which it must subdue in the soil before its beneficial influence can be clearly displayed to the eye. There is no manure less dangerous than marl in regard to general application; and where it does no essential good it scarcely ever does harm. In point of durability, it exceeds all other manures, especially in its effects upon grass lands, and has one advantage in an eminent degree, viz. being a mortal enemy to vermin. In Islay 50 cart loads were laid upon an acre, and somewhat more in Lismore. The expence varies according to the distance of carriage,—it may average from L. 2 to L. 6 per acre.

The usual time of marling is in the summer months; beginning in May, when the ploughing is nearly finished, and continuing to the commencement of harvest. It is sometimes laid on the green sward in winter; and, after being acted upon by the frost, is ploughed in the following spring. This is generally done for a crop of oats.

That marl is actually productive of the greatest benefit to the land on which it is used, is a fact which can admit of no doubt. Much variety of opinion however exists

exists as to the mode of operation by which this benefit is effected. Several intelligent persons consider the calcareous matter which it contains as the principal, if not the sole agent in the improvement of the land. Others are of opinion, that the principal advantage derived from marl is the addition of bulk or quantity which it makes to the soil; while others, again, regard its action as of a mechanical nature, considering the improvement of the land on which it is applied as the consequence of an alteration which it makes in the texture or disposition of the soil. It is highly probable that marl may derive a certain portion of its utility as a manure from each of the three causes which have been assigned, or, in other words, that, as we have already stated, it acts as a fertilizer and a stimulant at the same time. From analysis of the substance, it is found to be an intimate mixture of the aluminous and siliceous earths, usually combined with a certain portion of the carbonate of lime, and sometimes deriving a tinge from the presence of an oxid of iron. With respect to the calcareous earth contained in the marl, it must undoubtedly have, to a certain extent, the same action that would be produced by the direct application of lime as a manure; but as it is rendered clear, by actual experiment, that some descriptions of marl, which are used with advantage, do not contain any portion whatever of carbonate of lime, we cannot attribute the efficiency of marl to this cause alone. It is pleasing to conclude our remarks by observing, that whatever may be the *cause*, the *effect* of marl is almost uniformly great, in rendering a vast variety of soils clean, free, beautiful, and productive.

peats, and found that the process was perfect and complete. Shawfield had set the good example, and his industrious tenants eagerly followed it. The quantity of peats requisite for burning a ton of limestone cannot be accurately stated, for it depends both upon the respective qualities of the stones and peats, and also upon the manner of breaking the stones. The smaller the pieces into which it is broken, the easier is the process of burning. At an average, however, a ton of peats will burn three tons of limestone.

The quantity laid upon the acre of middling land in Gigha and Islay is from 60 to 80 bolls; but if a repetition of the dose is intended, 40 bolls are deemed sufficient at a time. The common boll is the herring-barrel measure of 32½ English gallons. The durability of lime in the soil, and the permanency of its effects, depend very much upon the nature and circumstances of the ground upon which it is used. If these are favourable, and if justice is done to the land in point of cropping, the benefit of liming may be discernible for 15 or 16 years; but if not, a season or two may suffice to obliterate every vestige of it. The Hebridian ought to guard carefully against the following methods of using lime as manure: viz. Laying it on a wet or spouty soil, or on land of a very sandy nature;—spreading it on *sloping* ground at a season of the year when rains usually fall; for these carry the finer parts of the lime along the surface into the nearest stream, and leave the land as it was before the lime was laid on it;—spreading it on land exhausted by white crops, or using it in profusion as a stimulant for corn or green crops on land which is reduced by long tillage to a *caput mortuum*,

mortuum, and consequently requires dung and other manures for enriching its staple. The farmer will also do well if he perseveres in using lime on land where calcareous matters already abound, and which therefore requires a mixture of other matter for rendering it permanently fertile. A change of manures too, like a change of seeds, is often advisable.

The increase of produce in Islay, and the improved Hebrides in consequence of liming, is rather better than as three to one; *i. e.* land which formerly, and under the old system, produced in three years twelve pounds value per acre, now produce thirty-six pounds value, or twelve pounds an acre per annum. But what is of still greater consequence is the fact, that the land is as good *after* the three crops have been raised upon it subsequent to liming, as it was before; while under the old management, it was exhausted, and, as it was termed, *run out*, for five or six years, and yielded nothing but a miserable species of herbage not worth 3s. per acre. To make the contrast more distinct, and the comparison more intelligible, we may state the two methods, during a complete rotation of eight years, as follows, mentioning merely the clear returns and the rent:

Year

Old Management.

Year		L.	s.	d.
1st	An acre Barley, 6 bolls at L. 1. 1s.	6	6	0
2d	——— Oats, 4 b. poor quality, L. 1. 1s.	4	4	0
3d	——— Oats, 1½ b. bad quality, L. 1.	1	10	0
4th	An acre of bad grass - - - - -	0	3	0
5th	——— rather better than last - - -	0	5	0
6th	——— still improving - - - - -	0	10	0
7th	——— - - - - -	0	18	0
8th	——— - - - - -	1	0	0
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Produce in eight years - - -		L. 14	16	0
Rent, 10s. per annum, deducted		4	0	0
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Profit - - - - -		L. 10	16	0

New Management.

Year		L.	s.	d.
1st	Barley limed, 8 bolls - - - - -	8	8	0
2d	Hay and Pasture - - - - -	6	6	0
3d	Pasture, good - - - - -	4	0	0
4th	Oats, good, 7 b. - - - - -	7	7	0
5th	Turnips - - - - -	8	0	0
6th	Barley, good, 8 b. - - - - -	8	8	0
7th	Hay and pasture - - - - -	6	6	0
8th	Pasture - - - - -	4	0	0
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Produce in eight years - - -		L. 52	15	0
Rent, 10s. per annum - - -		4	0	0
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Profit - - - - -		L. 48	15	0

Potatoes

Potatoes are not here admitted, because, as we shall hereafter see, when mentioning the islands separately, these have been of late years pretty well managed even where every other sort of crop has been carried on in the most unskilful and barbarous manner.

The above calculation is made from what was seen and learned in Islay in summer 1808, fixing the prices at a moderate average, not indeed of Islay (where barley is always immensely dear) but of all Scotland for 10 years past. Were the calculation founded upon the Islay prices, the contrast, and the advantage of using lime and a proper rotation of crops, would be still more striking.

3. *Clay*.—The most essential property of a soil is a due mixture and proportion of clay and sand*. Where this is found, cultivation may be carried on in perfection, and such land turned to account by the most approved modes of husbandry, provided the climate be tolerable, and manures can be procured at a reasonable expence. Now, although clay is not met with in the Hebrides in such extensive tracts or districts, comparatively speaking, as in the mainland of Britain, and sand has greatly the preponderance in the great mass of Hebridian soils; yet this species of manure is sufficiently plentiful in every island for being used on such land as it may be thought adviseable to incorporate with it. Clay gives tenacity and consistence to sand as well as to porous or light mossy soils. Little has hitherto been used, but that little has been found to answer extremely well.

* *Vid.* Walker's Hebrides, vol. i. p. 138.

well. A field of moss, near Stornoway in Lewis, was manured with clay and a little sprinkling of herring brine in 1808, and yielded *nine bolls of good barley per acre*, though sown with *only 10 pecks of seed*.

4. *Shells*.—Under this denomination, we may class three sorts of manures now pretty generally used in the Southern Hebrides, and commonly called shells, shelly sand, and coral or coralline. It is pleasant to the reporter to be able to state that he has found in the Hebrides a considerable degree of eagerness and industry displayed on this kind of manure, and that too more particularly within the last six or seven years.

There are vast quantities of shell-sand near Lamlash in Arran, both below and above the sea-mark. The little island of Inchmarnock near Bute has an inexhaustible bank of coral, which is now very much used by the tenants of the Marquis of Bute, and by other farmers in that island. It is carried in boats to the distance of 20 or 30 miles, and still reckoned a cheap manure: an unequivocal proof of its intrinsic value. Islay, Colonsay, and Oronsay, Mull, Skye, the Long Island, and more especially the Island of Barra, abound in shells and shell-sand; of which their more enlightened tenants now understand the use and the value. They are peculiarly proper for mossy soils, with which all the isles abound, and which, when manured with 10 or 12 tons of shells per acre, retain for many years the warmth and fertility which they afford. Clay, till, cold and compacted loams, are also greatly benefited by shells or coral, for obvious reasons; and no other manure is found so excellent for top-dressing rugged pasture grounds,

grounds, and making them yield a sweet, close, and wholesome herbage. Some fields near Aross in Mull were dressed two or three years ago by Mr Maxwell with shell sand, which he imported from a distance of 30 miles at a considerable expence, and by their beautiful verdure reminded us of the finest pastures of Hereford and Glamorgan. The gentleman just named carries on his improvements, by the aid of this manure, with much spirit, and is ably seconded by his son, who resided for a considerable time in Dumfries-shire, for the purpose of learning the improved husbandry of the richest part of that county, and is likely to set a very useful example to the farmers of Mull and its vicinity. It was also gratifying to see, in the remote district of Harris in the Long Island, a sloop laden with shells and shell sand, which she had imported from Barray, distant 80 miles from the harbour in which we saw her. This was so rare an instance of Hebridian industry, that it was strictly investigated, and the voyage mentioned was proved to be the ninth made by the same vessel for that kind of manure within the four months preceding July 1808. The cargo, about 40 tons, top-dressed three acres, and manured one acre completely for oats. In the Island of Barray there are four square miles of shells and shell sand, of the finest quality, and of an indefinite depth. The vessels are loaded at low water in one tide, and sail away when the flood tide, which rises 12 feet in neap tides, and 18 in spring tides, rushes in.

This sort of manure was first used in the north of Ireland towards the latter end of the 17th century, and was thence carried to Galloway early in the 18th century; since which time it has been gradually adopt-

ed over the west of Scotland. In the Hebrides it is likely to become extensively beneficial, as it is universally understood.

5. *Sea Ouze*.—Sea-ouze is the sediment of the ocean. It is taken up in most harbours upon the flukes of the anchors; and abounds especially about the mouths of rivers, and upon shores where the beach is of a clayey consistence. It is a mass of all the animal and vegetable substances of the sea in a putrid state, accompanied with a considerable portion of calcareous matter and sea salt, all incorporated with the fine clay which subsides from the waters of the ocean. It must therefore be of an enriching nature; and this has been found to be the case wherever it has been tried. It is found in great plenty in many parts of the Hebrides* and West Highlands, and in all other places in Scotland where the shores are commonly called *sleechy*. Much depends on its being mixed with the soil when it is recently dug. The putrid substances which it contains lose their force by long exposure to the weather, and ought therefore, if possible, to be speedily ploughed into the land.

Captain Cameron of Lochmaddy in North Uist, whom we have already mentioned with respect as a judicious improver of peat mosses, has availed himself of this species of manure, which lies adjacent to his farm, and found it exceedingly useful. One-fourth of sea-ouze, or *sea-sleech*, as he calls it, mixed with one half of moss and one-fourth of sea weeds, made an excellent
compost;

* *Vid.* Walker's Hebrides, vol. i. p. 152.

compost ; of which 20 cart loads, spread upon an acre, produced a luxuriant crop of barley, amounting to nearly 12 bolls the acre. In Uist and Lewis, we found the fact ascertained beyond a possibility of doubt, that where sea-ouze is spread upon dry moss, covered with heather, the heather disappears, and a crop of white clover springs up in its place. This however, presupposes that the ground be dry, and that there be a considerable quantity of ouze spread over the surface, or incorporated with the soil. The question will perhaps never be satisfactorily answered,—“ Whence come the seeds of this white clover ?”

6. *Sea weeds**, sea wrack, or sea-ware, as they are sometimes called, constitute one half of Hebridian manures, and nine-tenths of those of the remoter islands. They are of vast importance also as yielding the material for the kelp manufacture, which is now carried on extensively in those isles, and realizes at least one half of their total rents to the proprietors. At present, however, we mention this substance merely as a manure, and as such it certainly merits our utmost attention. So beneficial are its effects where it can be procured in abundance, that the full command of sea-weeds to a farm of good soil is alleged, in East Lothian, to be

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* *Alga marina*, distinguished by Linnæus into the four following classes, *fucus vesiculosus*, *fucus nodosus*, *fucus serratus*, *fucus digitatus* ; and by the common Highlanders and Hebridians, *glurach*, *feamuin-dubh*, *buiaig*, and *braggair*.

worth from 25s. to 30s. per acre of additional rent, in comparison with equal soil that has not this accommodation*. In the Hebrides, especially the Long Island, Coll, Tyree, and Arran, vast quantities are annually used, and they force pretty good crops from land that would otherwise be wholly unproductive, such as pure sand or light gravelly soils. An idea long prevailed that sea weeds are valuable as manure, merely on account of the alkali or salts which they contain; but Sir James Hall of Dunglass, Bart. has proved, by a series of chemical experiments, that the whole contents of sea weeds capable of acting as manure consist of a large quantity of *gluten*, very easily soluble in water, and extremely analogous to animal glue; and that any small quantity of sea salt it may contain is hardly more than may be conceived to arise from the sea water that adheres to its surface.

There are different opinions with regard to the *time* at which sea weeds ought to be laid upon the ground and ploughed into the soil. Some, as for instance the late Dr Walker, whose remarks on this subject seem to be countenanced by common sense as well as experience, advises the laying up sea weeds in heaps for some months near the sea shore, and covering them from the atmosphere and from rain by sea sleech, or some other manures with which they might form a compost; while Mr Kerr, the ingenious author of the Berwickshire Report, strongly urges their being spread upon the land immediately on their removal from the sea
mark,

* Vid. Kerr's Berwickshire, p. 377.

mark, and ploughed in without delay, as otherwise their force and efficacy must be lost. The Hebridians have been in the practice from time immemorial of using this manure in abundance; but their practice in this, as in almost all other agricultural processes, it is extremely difficult to reconcile with the experience of an otherwise sensible and acute people; and we therefore pass it over, and insert Dr Walker's remarks, which personal experience has taught us are perfectly just with regard to the Hebrides.

“ There is a remarkable property in all plants that grow under water, that in the air they dry more suddenly than any others. The sea weeds, though gross and succulent when taken out of the sea, by exposure to the air, in dry weather, soon shrivel away to a mere film. If an acre of land is completely covered with them, and they are allowed to remain on the surface for a few days during dry weather, the whole would not weigh 500 pounds weight. The valuable part of their substance, which constitutes their bulk and weight, evaporates. The slender fibrous parts of their substance, reduced to mere threads, only remain; so that it is like manuring land with cobwebs.

“ By inattention to this, more than three-fourths of the value of all the sea weeds used in Scotland as a manure are lost. The obvious remedy is, to plough them down immediately when laid upon the land; by which means their whole substance and their whole value are secured in the soil.

“ As the appearance of a quantity of sea weeds on the beach is somewhat casual, depending on the tides and winds, when they happen to be thrown up, they are

carried from the shore and spread on the land, till they can be overtaken by the plough; but were they properly managed, they would never be carried from the shore to the land in their recent state. They should be thrown into large heaps in the form of dunghills, above flood mark, and there reserved for use. They ought to be mixed, if possible, with sea sleech, nor suffered to remain long in these heaps, only from one to four months, as their putrefaction is very rapid. When taken fresh from the shore, they are so bulky compared to their weight, that an ordinary cart cannot contain a sufficient load for a horse; but when kept for a little time in such heaps, they become compacted, much heavier in proportion to their bulk, and more easily transported. By this method, likewise, the sea weeds may be obtained from the sea at every season of the year, as opportunity offers; and from the heaps in which they are lodged may be transported to the land where they are to be used, and when they are immediately to be ploughed in."—Vol. i. p. 155–6.

The quantity proper to be laid upon an acre depends upon various circumstances of soil and situation. The depth of from three to five inches, regularly spread, is the common average of the Hebrides. Their general fault is too lavish manuring, and consequently a premature impoverishment of the soil by the application of an undue and excessive quantity of a stimulating medium. The crop most usually raised from this manure is barley; and it certainly seems to answer better for that grain than any other. We found abundant proof of returns as high as 16 or 17 from barley seed, manured with sea weeds, on many of the isles; and, what may
astonish

astonish a scientific agriculturist, we found such returns, in some few cases, from land which had for many successive seasons been cropped with barley alone. The more common practice, however, is, to take a crop of barley with manure, and then two crops of oats without manure, and leave the ground exhausted and ley for a number of years to recover itself the best way it can. The stimulating effects of this manure are great, but not durable. Its efforts are rarely discernible beyond the second year, and very frequently disappear with the first. Its greatest advantage as a manure is, that it is not, like dung, friendly to weeds, (not possessing the seeds of any of them in its composition), and therefore answers extremely well for land which has been encumbered with these nuisances. The gluten which it contains tends also to consolidate and bind sandy soils, and to give them, in the course of a few years, if properly cropped, and not exhausted, an increase of valuable staple. This may easily be perceived as its effects in Tyree and in North Uist. The farm of Pebbill, in the last mentioned island, possesses land worth L. 2. an acre, which has been converted from barren sand to its present state, approaching to the finest loam, by the constant application of sea weeds for a century past. The same effects were observed in Lewis and Harris.

In point of productiveness, sea weeds are reckoned superior to common dung, not indeed when taking the same quantity of each, but upon the same field, with the quantity usually applied. One cart-load of dung goes as far as $2\frac{1}{2}$ of sea weeds fresh from the flood mark, and as far as 1 of sea weeds which have stood two months in a heap.

Some persons allege that this manure is unsuitable for potatoes, and Dr Walker's authority* countenances that opinion. But we found very luxuriant crops of potatoes manured with sea-weeds over every district of the Long Island; and although they are not in general so mealy and dry as those which are raised from dung, yet they are not ill-flavoured, and the quantity yielded by the acre is one-fourth greater than that which is obtained from dung manure on the same land. The disease called the *curl* is almost unknown in the Hebrides, but completely unknown where sea weeds are the ordinary manure†. They have also been used by Captain Cameron of Lochmaddy on turnip fields, and found to answer extremely well, though not quite so well as dung. For barley they appear to be the very best of manures, especially on sandy and light gravelly soils; but as we have already observed, this property often proves fatal to the soil, by tempting the improvident farmer to crop the same ground year after year while it yields any thing like a return for his seed, until at length the powers of vegetation are so nearly exhausted that three fourths of the crop consist of the basest weeds.

Some farmers, more skilful than the ordinary run of their countrymen, have of late begun to make composts of sea weeds and other manures, as we shall mention by and by; and their experiments have turned out extremely

* Vid. Walker's Hebrides, vol. i. p. 253.

† The Gállic language has no term for this disease in potatoes, a certain proof of its being a stranger to this country.

trremely successful. Where sea weeds can be procured at little or no expence, they will naturally constitute the principal manure of the district ; and this will long be the case in many of the Hebrides. Proprietors need only regulate the mode of managing this blessing on their estates, in order to enable their tenants to have an abundant supply all the year round. They ought to allow none of their tenants to take three white crops in succession from the same ground, even although they should annually manure it with sea weeds ; but far less when only one dose of this stimulant is applied.

With regard to the question which is frequently agitated in this district, viz. Whether sea weeds ought to be exclusively devoted to agricultural purposes, to manuring and top-dressing land ; or whether the kelp manufacture ought to possess the preference, and claim the best part of this Hebridian produce, we apprehend, that although much plausible reasoning might be used on both sides*, the two claims may be easily reconciled. Let the weeds which are cut from the rocks by human labour be made into kelp, for which they are particularly suitable ; and let those which are driven ashore by the tides and storms be applied as manure. The quantity of the last mentioned is still greater than that of the first in the isles ; and although in some of the eastern, as Bute, Mull, and Skye, they may not suffice for an adequate supply of manure, without adding to them the cut-ware or weeds, yet they will still afford a great help, and enable the farmers to double their

* Vid. Walker's Hebrides, vol. i. p. 119-20.

their usual quantity of manure. The Duke of Argyle allows his tenants in Mull all the sea weeds of their farms, both cast and drifted, for manuring their lands; but yet so high is the price of kelp of late years, that these tenants manufacture considerable quantities, and thus prove to a demonstration, that application to kelp is a more profitable use of sea weeds than to manure, even when the occupants are under no restrictions whatever.

7. *Yard dung*.—This manure is used in the Hebrides precisely as in other parts of the kingdom, and is preferred in its rotten state for every species of land excepting the stiffest clays. In Lewis, the inhabitants pay particular attention to this branch of husbandry; and, as we shall have occasion to mention afterwards, sacrifice their domestic ease and cleanliness to the advantage of securing a quantity of dung sufficient for their arable lands. In general, it is devoted entirely to the potatoe crops in the Hebrides, being thought too precious for any other purpose. An acre of well dunged land in Islay and Skye often produces 48 bolls of potatoes, or as much food as suffices for seven of the natives throughout the year. No comparison has as yet been made in the Hebrides with sufficient accuracy between the crops produced from lands manured with the different sorts of dung specified in the plan of the reprinted reports, nor indeed are scarcely any other manures used than those which we have already described.

8. *Composts*.—These are made up of the manures which we have above enumerated, and promise to be prosecuted in the Hebrides with great spirit and skill.

In

In Islay we found compost dunghills frequent, and very skilfully managed. Instead of allowing the running waters from the higher grounds to run away with the substance of their manures laid up in heaps near their houses, they contrive a channel for these waters through their grounds without interfering with their middings, and thus save the best part of them from being hurried away to the next river or the sea. Simple as this expedient is, yet we have found it seldom adopted in the Hebrides, and were grieved to see the poor people losing two-thirds of their yard-dung by carelessness with regard to securing it from the rains. Some farmers in Arran have a good plan for increasing the quantity and improving the quality of their middings. They lay some inches of sand, from 8 to 12, on the ground where they propose to make their composts, and take care that the spot is level, and has no running water passing through it. They then throw in weeds, dung, cleanings of ditches, bottoms of peat stacks, seaweeds, rubbish of old houses, straw, and every thing that comes in the way, which may help fermentation, especially brine of herring, or of salted meat, sea-waters, &c. until the month of April or May, when the compost is carried off to the fields. In this way they contrive to have a considerable quantity of manure at a cheap and easy rate, and that too of the best quality. Of this mixture they lay 20 or 25 cart loads upon an acre; and have tolerable crops for the first and second years. Did they observe a proper plan in their rotations of crops, they might contrive to have both double the quantity of compost manure for such parts of their farms

farms as require it, and to have triple the returns which are yielded at present from such lands as they have in cultivation. The proportions of materials for compost middings cannot easily be fixed, without a previous and a perfect knowledge of all the materials, and the relative natures, of which they consist. Where peat-moss is used in the Hebrides, it is, in consequence of the abundant supply, used liberally in all composts, especially on sandy and clayey soils. Either with sea-weeds or with lime, it occupies two-thirds of the mass, and is found to ferment readily, and to assist in the fermentation of other substances even when mixed in that proportion. Composts of sea-weeds, shell-sand, peat-moss, and sea-ouze, are sometimes met with, and have proved extensively useful in those isles where the command of pure and unmixed manures is precarious and slender. Of this description of composts, Captain Cameron of Loch-maddy, in North Uist, Mr Mackinnon of Corry, in Skye, many farmers in Islay, Gigha, and Collonsay, and a large proportion of the inhabitants of Lewis and Harris, afford good examples; and it is likely that they shall speedily be imitated by the tenants of the different isles in their vicinity, who are witnesses of the good effects of their industry.

SECTION IV.—IRRIGATION.

A SMALL field in the possession of Mr Blane, Collector of the Customs at Rothsay, in Bute, was the only spot, excepting garden ground, on which regular irrigation occurred in the Hebrides. It is not, indeed, natural to expect that this improvement shall be much attended to in a hilly country, almost continually envelopped in mists and rains, and which seldom suffers from drought, excepting in sandy districts, where the command of water for irrigation would be accompanied with great trouble and expence. However much, therefore, we admire the process by which lands in Wilts and Dorset, not otherwise worth 6s. an acre, are raised to the value of L. 3 or L. 3. 10s. we cannot dwell upon this section in a report of a district in which it is almost totally unknown.

CHAPTER

CHAPTER XIII.

EMBANKMENTS.

SECTION I.—AGAINST THE SEA.

WHERE arable land of good quality is scarce, and where any such can be procured in the most convenient situation, at a moderate expence, it might be imagined that no opportunity would be neglected of securing it for the advantage of the party concerned; yet we find in the Hebrides, where ground of this description is extremely valuable, many extensive tracts, situate near manure, and, of course, lying at the level of the sea, overflowed at every tide with a few feet of salt-water, and which might be secured against inundation at so small an expence that the first year's crop would pay it. The tenants cannot be blamed, for they have not the power of making any serious exertion
whatever,

whatever, without encouragement from the landlords, who, in nine cases out of ten, have hitherto done nothing at all in this matter.

At the head of Loch-Gruinart in Islay, Mr Campbell of Shawfield has executed an embankment against the sea, which does honour to himself, and reflects credit on Hebridian industry. He has reclaimed upwards of 400 acres of land, which was formerly a salt-marsh overflowed by every spring tide, and, consequently, of no use whatever, excepting for a few months of the year, and made those acres worth from 12 to 25 shillings each which were not previously worth two. By this improvement finished in one summer, at an expence of about L. 600, he raised a farm formerly worth L. 65 to L. 300 per annum; and gave regular and profitable employment to 84 labourers for three months of the spring and summer.

The work was executed twelve years ago, and has stood the brunt of the Atlantic ever since. On measuring the dimensions of the embankment, they were found somewhat different from what they were when the work was first finished. This must have happened, as the fence is made of clay and earth principally, the ground affording no stones for the purpose. The dike is nearly eight feet high from the foundation, 12 feet broad at the base, and four at the top, and extends from one side of Loch-Gruinart to the other, a distance of an English mile. The first attempt was made somewhat farther out in the loch, and failed in consequence of a furious storm having assaulted it before the materials, of which it was composed, had time to harden and consolidate. The expence, however, thus incurred

red was not considerable, nor did it deter the generous and enlightened proprietor from employing the same men immediately thereafter upon the same undertaking. He had a difficulty to surmount which at first appeared truly formidable, and might have alarmed, or even discouraged, a less energetic proprietor; a pretty large stream of water, called in Islay *a river*, flowed from the interior of the island into the head of the loch, by a level tract, and by *several mouths*, during bad weather. This stream must either be confined to one embouchure for the purposes of facilitating the flood-gates requisite for conveying off the river water and for shutting out the sea-flood from the space to be reclaimed, or it must be diverted from its usual course, and carried at once to the opposite side of the country, and discharged into Loch-in-daal. Every one knows how expensive and arduous a task it is to divert the course of rivers, and how many unforeseen obstacles start up in the progress of the operation. But Shawfield, wishing to finish the work in a way which would leave it complete and secure for many years, undertook the last mentioned plan, and brought it to a happy conclusion. He has thus gained for ever, (for the expence of repairing the dike is a mere trifle, and will always be cheerfully defrayed by the tenant,) a tract of ground worth L.235 per annum, and which will probably encrease in value at each successive lease; or in other words, and estimating the fee-simple at thirty years purchase, he has gained L.7030 Sterling, by the embankment in question.

The same gentleman has finished a similar embankment against the sea, at Loch-in-daal-head, near Islay House. This improvement adds to the beauty of his
magnificent

magnificent farm, and will unquestionably conduce to the salubrity of the air in the vicinity of his seat. It also affords an excellent example for his tenants, as may be seen from what we have already mentioned as done by Mr Campbell of Ardmore, in the eastern district of Islay, and what others are meditating in the same island.

The great difficulty of such embankments consists not merely in getting a good steady foundation for the dikes intended to be reared, and in leading and building the materials of the fabric, but in providing a suitable outlet for the back-waters, and in defending the embankments against the inroads of horses and cattle. If these encroach upon it, all the labour and all the hopes of the builder are completely lost. It is in this matter, with regard to his sea-dykes, as well as his plantations, drains, and other improvements, requiring constant and vigilant inspection, that Shawfield's judgment and management are truly admirable; nor indeed could he otherwise, in this region, have ever accomplished one-tenth of what his fine Island of Islay displays to our view. This remark was made by a neighbouring Hebridian proprietor; and is consistent with the general character given of his laudable conduct in agricultural affairs, by all with whom we had an opportunity of conversing. His indeed is the rare blessing of conferring benefits without creating abuses on his estate; and of excelling other proprietors, without exciting any of their malevolent passions. But to return from a digression into which the great and valuable improvements of Mr Campbell of Shawfield in sea-embankments have led us, and for which we re-

quest that gentleman's forgiveness,—we may remark, that in the whole Hebrides 20,000 acres might be reclaimed in a similar manner, by excluding the sea from the heads of inland bays, and by draining lakes which, in its immediate vicinity, lie a few yards above its level.

In Benbicula, on Mr Macdonald of Clanranald's estate, the embankment and drain made by Mr Nicolson of Ardmore, and by Mr Brown factor on the estate, save a thousand acres from occasional inundations; and have reclaimed land worth L. 100 per annum to the proprietor. South Uist has a plain of 1800 acres, between Boisdale and Gearyvatis, which might be completely drained, embanked, and kept dry, by an outlay of L. 1500, and an annual expence of L. 50, in cleaning ditches and repairing dykes. The tenants of North Uist, especially in the districts of Illeray and Carinish, might add 1000 acres to their arable land at the same expence; and thus double the quantity, and quadruple the intrinsic value of their cultivable ground, without feeling any serious addition to their rents; although $7\frac{1}{2}$, or even 10 per cent, should be added to them by the proprietors, for the original costs of the improvement to which we allude. The quantity of land that might be thus saved in Lewis, Harris, and some of the smaller isles, is immense; but it is not likely that much shall speedily be done in this kind of improvement, especially in the parts of the Hebrides in which the proprietors do not reside, and where they are unable or unwilling to lay out money on the improvement of their estates.

Nothing particular can be stated regarding the formation or plan of either embankments against the sea,

or

or the flood-gates with which they are furnished, in this district. Both are of the common sorts, and finished according to circumstances of places and builders. Upon the whole, the few which have been made, excepting those of Islay and Benbicula above mentioned, merit no particular notice, either in point of solidity or of ingenuity and beauty.

The other descriptions of embankments stated in the plan of the reprinted reports, cannot here be dwelt upon; the Hebrides being almost entirely destitute of them, and possessing none of which a written account can yield pleasure or advantage.

CHAPTER XIV.

LIVE STOCK.

IN thinly peopled and sterile regions, live stock has always constituted the leading object of attention to the natives. Riches, power, and influence have, in every age and nation, depended upon the quantity of such stock, and must of course, in periods prior to the introduction of commerce and the general diffusion of the arts and sciences, have almost exclusively occupied the time and labour of the inhabitants. It was for their live stock and its accommodation that they migrated from region to region, that they often carried on the most bloody wars, and that they abandoned their homes and the sepulchres of their fathers. In the Hebrides, intersected as they are by arms of the sea, and constituting what may be called separate principalities, from very early eras of their colonization, these Asiatic and African

African migrations could not so conveniently take place; but the nature of their soil and climate has constantly obliged their population to pay the most particular attention to their live stock. On this stock depended their subsistence and their comfort. Every article of luxury, and even the arms with which they defended themselves or assailed others in war, or with which they obtained the spoils of the chase or of the ocean, were received in barter for what live stock they could spare to their continental or Irish neighbours, and compelled them to regard the rearing of cattle as an object not only of primary consideration, but also of indispensable and absolute necessity. By this the vassal paid his lord, and the lord protected his vassal. Both were mutually bound by the same ties to prosecute this branch of economy, and to devote to it their time and their care. The same necessity still exists, notwithstanding the favourable change effected in their situation by the more friendly communication with the rest of Scotland and of Britain, which has been the result of the union of the kingdoms, and of the various advantages which have been derived from it. Neither the acquisition of the potatoe root, (by far the most beneficial hitherto made by the Hebrides,) nor the kelp manufacture, nor the fisheries, nor the dawn of agricultural and commercial illumination, which now unquestionably promise better times for these remote districts, enable them to dispense with the risks and labours of the pastoral life. Live stock is still the great support of the Hebrides, and, as such, merits a principal portion of our regard in a report of this kind.

SECTION I.—CATTLE.

OF this description of live-stock there are about 110,000 head in the Hebrides; and of these *one fifth* are annually exported to the British continent, and fetch at a moderate average L. 5. each, or L. 110,000, which is somewhat more than the present rental of the isles*. The use of the four fifths which are kept, yields nearly one third of their subsistence stock to the inhabitants in meat, milk, manure, and money circulated among themselves by home purchases. The rest they derive from their agriculture, fisheries, and kelp manufacture. They have hitherto always purchased more wool than they sold; so that we cannot calculate much upon the profits of their sheep, further than in as far as the carcasses of the few which they slaughter in autumn, and the clothes made of their wool by the natives themselves, can be taken into account.

1. *Breed*.—The breed of cattle in the Hebrides was perhaps originally the same in all the isles; but it now varies so considerably, that it would be difficult to fix on any part of the whole region, where the *real ancient* Hebridian breed can be found. Some persons imagine

* Vid. Page 69.

• imagine it to be the Skye*, others the Mull, and others again the Lewis or Long Island species. A person habituated to accurate observations on cattle, can easily distinguish those different breeds from one another, and all of them from the larger breed now introduced into Islay, Collonsay, and some parts of the Long Island, especially Barray, by persons who pay attention to so important a department of aggrestic economy.

Beginning with the southern islands, as more advanced and improved in every respect than the northern, we find Islay, as usual, pre-eminent in its breed of cattle. This island, however, possesses none that can be properly called a peculiar *Islay breed*, but has gradually attained to its present eminence as a grazing and breeding district by the skill and activity of its people. So lately as 30 years ago, the general average of the cattle of Skye and Mull brought as high prices as those of Islay; but for the last ten years, these two islands

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have

* The Isle of Skye breed of cattle has long been celebrated as a hardy, easily fed, and speedily fattened species of cattle, and is accordingly propagated with much eagerness over the other isles. Some individual beasts have manes, like those of horses, on their necks, and were by strangers fancied to constitute a distinct and separate species; but we know *for certain*, that the same manes occur also in Mull and on the Long Island, and elsewhere in the Hebrides, as it were accidentally on some calves of the same fold and not on others,—and that, although the maned individuals are reckoned fully more vigorous and hardy than the rest, they do not form a different species, or transmit that distinctive mark to their progeny.

have sold their cattle at an average of L.6, while that of Islay has been L.8. 10s.; and the highest prices obtained for whole *parcels* or droves have been frequently in the proportion of *two to one*.

Islay, (and when mentioning it, we may also join Collonsay, the proprietor of which is one of the first graziers and breeders of cattle in Scotland,) has gradually arrived at this superiority over the northern Hebrides by means of *judicious selections* from the native Hebridian and West Argyle breeds, and by feeding better, especially during the early period of the animal's life, than is practised in the other isles. The finest bulls and heifers have been procured from all parts of the west of Scotland, (carefully excluding Irish contamination) by Mr Campbell of Shawfield and many other gentlemen and farmers in Islay, and by Mr Macneill of Collonsay, at a considerable expence, and with vast attention and trouble for many years past. The best of these and of their descendants are kept as a breeding stock, while the most unsightly and least serviceable are annually sold off from these islands, to the number of above 3500, or slaughtered for winter provision, to the number of 1200. Amidst the remainder, which amount to about 9800 head, three-fourths are found every way suitable for the reproduction of more than the exported and slaughtered numbers, and accordingly yield an increase of calves, amounting to about 5800 head, out of which the wonted selection for rearing can be made. It must be acknowledged, indeed, that what we have to state as praiseworthy on this head refers principally to the exertions of the proprietors and gentlemen farmers in Islay and Collonsay, few of the lower tenants

tenants paying much attention to the breed or form of their cattle; but the last mentioned will naturally imitate the good example of their superiors both here and in other islands; and therefore for their use, we here give a short description of a *bull* of the Islay and Colonsay kind, as we had it from consulting the best breeders above alluded to, and comparing their accounts with the finest animals with which we met on those islands.

A bull of the Kyloe* breed should be of a middle size, capable of being fattened to fifty stone avoirdupois. His colour should be black (that being reckoned the hardest and most durable species), or dark brown, or reddish brown, without any white or yellow spots. His head should be rather small, his muzzle fine, his eyes lively and prominent, his horns equable, not very thick, of a clear, green, and waxy tinge; his neck should rise with a gentle curve from the shoulders, and should be small and fine where it joins the head; his shoulders moderately broad at the top, joining full to his chine and chest backwards, and to the vane of his neck forwards. His bosom should be open, his breast broad, and projecting well before his legs; his arms, or fore thighs, muscular, and tapering to his knee; his legs straight, well covered with hair, and strong boned. His chine or chest should be so full as to leave no hollows behind his shoulders; the plates strong, to keep his
his

* The term Kyloe is probably a corruption of the Gállic word which signifies *Highland*, and is pronounced as if spelled Kaél by the common people.

his belly from sinking below the level of his breast. His back or loin should be broad, straight, and flat; his ribs rising above one another in such a manner that the last rib should be rather the highest, leaving only a small space to the hips or hooks; the whole forming a roundish, barrel-like carcase. His hips should be wide placed, rounded or globular, and a very little higher than the back. His quarters (from the hip to the rump) should be long and tapering gradually from the hips backwards, and the turls, or pot-bones, not in the least protuberant; his rumps close to the tail; his tail itself should be thick, bushy, well haired, long, and set on so high as to be in the same horizontal line with his back. His general appearance should combine agility, vivacity, and strength; and his hair should be glossy, thick, and vigorous, indicating a sound constitution and perfect health.

For a bull of this description Mr Macneill of Collonsay lately refused 200 guineas; and for one of an inferior sort he actually received L. 170. Sterling. Mr Macdonald of Staffa bought one, nine years old, at 100 guineas.

It is unnecessary to enter in detail upon a description of a Kyloe, or West Highland, or Hebridian *hrifer*, as the above, with some very obvious modifications, answers for animals of both sexes. Strangers, on visiting the Western Isles, cry out against the folly of the people in keeping cattle of a small breed; when by changing it for the Irish, or the Lowland Scotch, they might greatly enlarge the carcasses of their stock. But this is often a rash opinion. The great question in
Hebridian

Hebridian grazing and rearing, is, what breed will best answer the land and climate, and what size can be most easily and securely raised at the *smallest expence*? Heavy cattle cannot seek their food in bogs and marshes, leap over ravines, rivers, and ditches, or scramble through rocks, and in the faces of cliffs and precipices, like the present breed, which is almost as active and nimble as a Chamois goat; nor can the poor Hebridian tenant afford to breed any stock which is not proof against the inclemency of his rains and storms all the year round. It is infinitely safer for him, therefore, in the present imperfect state of his agriculture, and perhaps even at all times, and in all circumstances of his country, to rear too small, than too large a breed of cattle; and to improve his indigenous, hardy, excellent species, than to import from other districts such breeds as may be indeed profitable for their circumstances and climate, but which would probably perish in the Hebrides, without more attention being paid to them than, in his situation, he can conveniently afford. A moderate size is accordingly preferred by all skilful graziers, *i. e.* bullocks or stots, which, fattened at the age of five, weigh 30—36 stone avoirdupois, and heifers which weigh, at the same age, 24—30 stone. This rule, no doubt, admits of considerable latitude of application; and while the weight or size now specified answers extremely well for the common average of the best breeds used by gentlemen farmers in Islay, Mull, Coll, Tyree, and Skye, it may be deemed an under size on the lands occupied by the proprietors of Islay and Collonsay, and by some of their

their people, who have lately introduced green crops, and, by a skilful mode of managing their lands, can afford food and shelter for their cattle in abundance during the whole year. Those gentlemen may raise the native breed (still, however, preserving the same identical genus and species of cattle,) to the weight, when fattened, of from 24 to 42 stone for their bullocks and heifers. Mr Campbell of Shawfield had, accordingly, in 1807, a heifer from his farm in Islay fattened for a few months at Pencaitland in East-Lothian, and slaughtered at Haddington, which weighed 63 *stone* avoirdupois. Mr McNeill of Collonsay sold several score of bullocks and heifers, lean, this season, (1809) at Dumbarton, at L. 12 a-head, which sum, at the average of eight shillings per stone, gives a weight, *lean*, of 30 stone. On the other hand, the average weight above mentioned, as perhaps the best suited, upon the whole, to the actual circumstances of the Hebrides, is considerably too great for the lower order of farmers, and still more so for the numerous classes of sub-tenants and cottars. The miserable accommodation which these can afford, will scarcely suffice for cattle of half the size of those reared by the proprietors of the improved islands, and by their richer tenants. Bullocks of 20 stone weight, and heifers of 18 stone, are, therefore, the heaviest which they can bring up; and there must be a considerable change in their situation before they can venture upon introducing into their general possession a heavier or better breed. What is true of the lower classes of tenants in the improved Southern Islands of Islay and Collonsay, holds as to the *general run* of people in the Northern Isles. The
Isles

Isles of Skye, and of Mull, possess breeds of cattle much better adapted to their present situation than larger breeds would be; and that they are capable of being improved both in point of form and of size, by selections from among themselves, and by better feeding, appears evident from some particular stocks or herds on those islands, compared with their general average. It is not, therefore, necessary to dwell upon the consideration of the breeds of those Northern Isles, which indeed are besides sufficiently well known to the public, both by character and by name.

It is by no means from a love of singularity, or any wish to damp the spirit of improvement, which in this department of agriculture, more than in any other, has of late, happily begun to shew itself in the Western Isles, that these ideas are here given; it is merely from the conviction that any alteration to the better must be gradual, the result of experience, and the fruit of better agricultural management in raising food for their cattle, than from a change of the *breed*, that we have ventured upon a species of reasoning, which we are aware may appear to some persons as at once paradoxical in itself and also untenable, because inconsistent with the efforts of some spirited individuals and patriotic public bodies and incorporations, who have for some years past paid much attention to this object. We have the highest respect for those societies and individuals, and are fully convinced that their labours are attended with much success, and will in time appear to greater and greater advantage, the more they conduce to raise those islands from the state of neglect and of depression in which they have lingered for ages:
but

but, to be useful, their efforts must be gradual; they must guide, not compel; they must point out the desirable object distinctly, and animate to its attainment; not involve it in clouds, or hold out a phantom of benefit to mock the grasp of the simple and unwary. To what purpose, for instance, or to what end for the natives of the Long Island, are there prizes and premiums offered for the best shew of cattle reared in the county to which they belong, if the place fixed for inspection and comparative trial is 80 miles off, and that too over a ferry of 30 miles? To what effect do the numerous subscriptions paid by individuals belonging to that remote district turn to those who pay them to the funds of such societies, if no premiums or prizes are distributed in accessible and commodious places in the island itself, but granted to persons who show their cattle in some district some scores of miles off; and who have so many local advantages of, which the Hebridians are deprived? This we only glance at here, but we shall advert to it afterwards in its proper place.

The subdivisions contained under the head of which we treat, in the plan of the reprinted reports of the Board of Agriculture, do not admit of separate discussion with regard to the Hebrides; as no varieties of breeds are there so much as thought of, for the different purposes specified, viz. *for beef, for milk, for work, &c.* The only object of breeding cattle, worth mentioning, is for *sale to drovers*, who carry them to the Lowlands and to England, in order to be there fattened for the shambles; nor are the rules pursued in breeding worthy of any particular notice. In Islay and Collonsay, and over all the best managed isles, the
calves

calves get almost all the milk of their dams, and frequently more. What butter and cheese is made, and all the milk used by the inhabitants, are saved from such cows as have produced calves not reckoned good enough for rearing, or are killed as being too many for the portion of land to which the cattle in question are attached. Sometimes when a calf is slaughtered, another calf receives not only the milk of his own dam, but also that of the dam of the slaughtered too, without any deduction, and sometimes only a half, or one-third of it*. The calves in general, constitute from one-fourth to one-fifth of the cattle of a farm. In the improved

* It frequently happens that the dam of a good calf dies, or is sold off, and it is thought proper to breed up the calf, by giving him a step-mother, or new dam, whose calf must be sacrificed for this purpose. The Hebridian cow, being naturally sagacious, refuses her milk, and drives the intruding suckling away from her; nor will she even yield her stores to the well-known dairy-maid, in spite of her songs and flattery; until the image, at least, of her own calf is presented to her. This is done either by placing its skin stuffed with straw, or hanging loosely over another calf, beside her while milking. It often requires much care, and takes several days before the poor deluded creature is reconciled to this imposition; but she generally ends by transferring all her maternal affection to the stranger. The whole procedure is sometimes very affecting, and yields a beautiful view of animal instinct.—*N. B.* It is generally believed in the Hebrides, that calves thrive better by suckling the cows than when they are fed with milk from the pail.

proved islands, bullocks are usually sold off, either to itinerant drovers in the isles, or at Dumbarton or Falkirk markets, at the age of three years; and heifers or cows at all ages, from two to seven, or even nine or ten.

In Mull, Skye, the Long Island, and most of the other Hebrides, the bullocks are usually kept a year longer than in Islay and Collonsay, being of slower growth, in consequence of inferior keeping; and heifers or cows are rarely sold before the age of six or seven, excepting such as are found to be bad breeders, deficient in milk, or otherwise unfit for the farmers purpose.

Cattle are never used either for draught or the plough in the Western Isles; nor indeed could they well answer in a district of their general physical formation. There are, however, some islands, such as Tyree, Coll, Uist, and part of Lewis, which in many of their sandy level districts might use oxen with advantage in ploughing and drawing sledges, did the people take the trouble of training them.

2. *Food.*—1. Winter.—In winter, Hybridian cattle suffer severely from want of green food. They must often have recourse to sea-weeds, heather, sprats, rushes, and other coarse substitutes for provender, which they would not look at if not compelled by imperious necessity. To obviate this distress, most farmers save some meadow hay, and as much straw as they can, and *hain* or spare some portions of grass grounds adjacent to their dwelling houses, for supporting young stock and milk-cows during the severity of the winter and spring. This provision is, indeed, never adequate.

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Many animals, both cattle and horses, die of hunger every season, and still more of diseases engendered by poor feeding, over all the isles; and were the winters as cold, and the snow as deep and permanent as in many other parts of Britain, very few stocks would escape utter destruction. The mildness of the climate, at least with respect to *cold*, (for it is boisterous and rainy to excess,) the assistance of sea-weeds and heather, and the astonishing hardiness of the cattle themselves, save them, however, in some measure, and, although exposed to the open air all winter and spring, not above one-eighth dies of famine or of its immediate effects. Here we do not mean to include in our calculation the cattle of the improved isles, which are housed and regularly fed and well managed in winter; but merely the great mass of Hebridian cattle in general.

The want of winter food for their cattle, is the greatest disadvantage under which the Hebrides labour; and to remove it ought to be a principal object with all their farmers. This can be affected by raising green crops, by inclosing lands hitherto common or waste, and especially by reducing the numbers actually kept to two-thirds of their present amount.

Until attention is universally paid to these points, it is in vain to look for relief to Hebridian cattle during the winter months; neither the introduction of new grasses, however desirable and praiseworthy, nor any souming regulations, which do not greatly diminish the numbers of cattle in this vastly overstocked region, can suffice. The practice of housing and soiling them, cannot become general, until various preliminary im-

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provements

provements shall have been adopted ; nor indeed can it be looked for while wood is so scarce, and the expence of rearing buildings of every description so enormously high in the district.

1. *Hay*.—The quality of the common hay used in the Hebrides, is very poor, and consequently their cattle neither thrive so well as they would otherwise do, nor do they yield the quantity or quality of manure which they would produce by proper feeding. One ton of manure from a well fed barn-yard stock, will go as far in manuring land, as two from half starved cattle or horses. It is no wonder therefore, that, when comparing the crops produced by similar soils and similar manures in Islay, Collonsay, and the improved islands, with such as are found in the poorer and neglected ones, a striking difference should be observable in this respect. Let the Hebridian then pay every possible attention to the quality of his hay, by draining, top-dressing, and otherwise improving his natural meadows ; and let him augment the quantity of his winter stores, by inclosing some parks near his dwelling, and possessing at least four or five acres under sown-grasses annually, whatever trouble and expence it may cost him. Having already recommended the kinds of grasses most proper for his attention, we need not here repeat them. The fiorin (*fiar-im*) grass, so strongly praised by the indefatigable Dr Richardson, and to which we have alluded in a former chapter*, may perhaps

* Vide p. 316.

haps yield to the Hebrides a great accession of winter hay and pasture, when the cultivation and management of it shall be properly understood.

2. *Green crops, cooking, boiling, &c.*—Potatoes are the only species of green crop, or rather of food, excepting a little straw, corn, and hay, which cattle receive from the hand in the Hebrides during winter. On the farms and islands, however, so often specified, where turnips have of late years begun to be cultivated, these afford some help. In Islay and Collonsay, potatoes are boiled before being given, and are found to be more palatable and nutritive in that way than raw*. Vast quantities are thus given to young stock and milk-cows in February, March, and April, and are the means of saving them from impending destruction. It is not easy to conceive how cattle were fed during those months in the Hebrides before the introduction of potatoes, nor indeed how the natives themselves could at all subsist.

2. *Summer.*—So good is the Hebridian breed of cattle, that two or three months of tolerable feeding, or pasturage, restore them from the jaws of death to a state approaching to fatness†. One cannot easily believe in August, that the sleek beautiful animals which frolic among the meads, and can scarcely be restrained by any fence or inclosure, are the same creatures which

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* They are boiled with steam.

† *Vid. supra*, p. 311.

he saw in the beginning of May so miserably reduced and weak that they could not rise from the ground without help, or walk to their pastures without staggering like a drunken man. No artificial means are used in summer, but merely arranging matters so that as little of the first crop, or first growth of the pasture, as possible shall be lost by neglecting to shift cattle from one part of the farms to another, *in order to consume the herbage before the seeds are far advanced*, and before it becomes so hard that they will refuse to eat it. Even this obvious and salutary practice is too frequently overlooked; and much excellent grass is allowed to perish, and to rot upon the ground, especially in Skye and the Long Island. In Islay particular attention is paid to it, and accordingly the cattle of that island, as well as of Collonsay, are in condition to appear in a creditable manner in the market several weeks earlier than those of the less improved isles. Vegetation is so rapid in these districts in ordinary summers, that no field should remain undepastured in June and July above 10 or 12 days at a time, nor should any grass, but such as is meant to be cut for hay, remain all summer without a regular succession of cattle, sheep, or horses to consume it. The quantity of grass allotted to Hebridian cattle, as summer pasture, varies prodigiously in the different islands, and even on different farms of the same island. While some judicious tacksmen, or proprietors, allow an acre and a half to one cow, small tenants crowd their lands with wretched beasts to the number of three or four to each acre, and these must of course barely exist in a half starved condition. In Arran, Lewis, some parts of Skye and Mull,
and

and on many of the second rate islands, the ground bears more than double the numbers which it can afford to feed properly; and the consequence is, that of the miserable sorts which are reared, one-fifth perishes from want, and the remainder sells usually at little more than one-third of the price which is paid for cattle of the same breed in the well managed islands.

3. *Management.*—1. *Fatting.*—Although breeding, and not fattening, is the principal object of the Hebridian farmer in his management of cattle, yet there is no doubt that the latter might be prosecuted to advantage on some of the isles. Of those it may suffice to mention two, as instances in point, and the calculation shall be made upon an average of the last 10 years prices. The islands of North Uist and Tyree are perhaps the richest in point of herbage of all the *unimproved* isles; we call them so, not on account of their inferiority (relatively speaking) to the general run of the Hebrides, but of their not having as yet adopted the new improved husbandry, of Gigha, Collonsay, and Islay. The best grass in North Uist and Tyree (and it is as good as any natural pasture whatsoever in summer and autumn) is let for cattle at 12 shillings per head, during the 6 months of May, June, July, August, September, and October. In the end of October yeild beasts fed on this grass are fit for the butcher. They weigh 20 stone, and afford the best beef in Britain. The average price for such cattle in May and June since 1799 has been L. 4. 15s. The comparison between both kinds of management will therefore stand thus; taking the sales annually at 1000 head.

Present Management.

	<i>L.</i>	<i>s.</i>	<i>d.</i>
1000 neat cattle at L. 4. 15s. -	4750	0	0
Grass saved at 12s. per head -	600	0	0
Incidental loss of one in ten - -	475	0	0
Expence of herding, &c. 2s. each -	100	0	0
<hr/>			
Net profit and saving -	L. 5925	0	0
Interest for 6 months - -	148	6	0
Income from 1000 head of cattle, realized	<hr/>		
annually in October by Tyree and North			
Uist - - - - -	6073	6	0

Proposed Management.

	<i>L.</i>	<i>s.</i>	<i>d.</i>
1000 neat cattle, each 20 st. at 8s. per st.	8000	0	0
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Deduct salt and casks, at 10s. each beast	500	0	0
Expence of sending to market 5s. each	250	0	0
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Total expences - - -	750	0	0
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Total income - -	L. 7250	0	0
	6073	6	0
<hr/>			
Balance in favour of <i>fattening</i> -	L. 1176	14	0

Now if Tyree and North Uist thus sacrifice nearly 20 per cent of the income derivable from their cattle, in consequence of selling them lean instead of fattening, salting, and exporting them to the Greenock and Liverpool markets, how great must we suppose the loss of

of all the Hebrides to be with regard to the same article? The most moderate calculation will make it amount on the northern isles to L. 6000 per annum*. So sensible indeed are the farmers of Bute and Arran, of this circumstance, that they have of late years begun to export fatted cattle regularly in the months of October and November; and we saw them this last season receive from L. 10 to L. 12 a head for them at Greenock and Saltcoats; had they sold them in May at home, they would have fetched only L. 5 or L. 6 a piece.

2. *Dairying*.—The acknowledged excellence of Hebridian cheese and butter is the consequence not of skill or economy in dairying, but of the intrinsic goodness of the milk. Small cattle fed on old aromatic herbage are known to yield the richest and sweetest of milk, as well as beef, and that too in proportion to the fineness of the animal, and the smallness of its produce, in proportion to the size of its carcase. Well shaped cattle with a strong tendency to fatten, yield very little milk, their secretions running into fat and marrow; but what milk they afford is of the best quality. An Hebridian cow, especially of the isle of Skye breed, rarely yields above a Scot's pint; and at an average, cannot be said to give one-fifth of the quantity

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which

* In this calculation too we have made no allowance for the loss which is sustained from wanting the milk of the cattle, during the six months in question, and which may be fairly estimated at L. 400 Sterling.

which is commonly obtained from an Airshire, or Fifeshire cow. Their milk is frequently in the proportion of five to one, while their carcasses are as 1½ to 1.

In Bute, and on some farms in Arran, Airshire cows, commonly called *crummies*, are introduced for their superior milking powers. They are not much larger in carcass than the better sorts of Hebridian cattle, but they yield triple the quantity of milk. In form and hardiness, and in aptitude for fattening, they are confessedly inferior to the native breed; and accordingly no more are maintained than merely as many as supply the farmer's demands for milk, either in his own family, or his immediate neighbourhood.

On the best managed of the remote islands, too, no attention is paid to dairying farther than procuring from the herd as much as supplies the farmer's own family with milk, butter, and cheese. The great object is to rear good healthy calves, and for this purpose the handsomest dams are preferred, not those which yield the greatest quantities of milk*. Perhaps
this

* Much attention is of course paid to the figure and size of the bull, and none to the milking properties of his dam, though these are fancied to be hereditary. Bulls are not kept above three or four years with the same herd or fold, as it is believed that a degeneracy takes place when the same animal is continued year after year with his own offspring. The prime age of a bull is between four and seven years. Young bull calves are kept particularly clean, and fed most carefully and regularly from their earliest period; it being a certain fact that no after feeding or attention will make up for a deficiency in these respects at first.

this system is, upon the whole, the best for the Hebrides, taken collectively; but it certainly is not so for *some* of the most remote. The two islands, of which we have made mention as particularly fitted for fattening cattle, viz. North Uist and Tyree, would, we apprehend, also find their advantage in attending with care and economy to their dairy. The particular nature of their herbage, being soft, rich, and saturated with saline ingredients, either from the atmosphere, or from the water of the soil, is known to communicate a tendency to a fatal distemper, called "*bloody water*," which assails them sometimes in their native place, but makes dreadful ravages among such as are carried off to the other islands, or to the mainland markets. The change from their wonted food to harder species of grasses is reckoned the principal cause. No effectual remedy, or preventative, has hitherto been discovered, and the cattle of those islands have accordingly (but in particular those of Tyree) acquired a bad character among drovers, and lose one-third of their relative value when exhibited for sale. But these very cattle are known to give as much milk, of the very best quality, as any in the Hebrides, and that too for a longer space of time after calving than is common in the other isles. This last mentioned circumstance is important with respect to a dairying system. People complain bitterly of Hebridian cattle *falling off from their milk*, as it is vulgarly expressed, and that too without any known cause, but as is supposed from a constitutional peculiarity in the breed. This falling off is less complained of in Uist and Tyree than in most of the other Hebrides; their cows will therefore yield much more
milk

milk in the season than their neighbours cows; and suggest a plan for fattening and killing such as are intended for exportation, and for attending to a good dairying method for the milk cows which are retained.

So many judicious directions are already before the Board of Agriculture for the making of butter and cheese, and the general management of a dairy, and especially in the Reports of Cheshire, Gloucester, Devonshire, and the home counties of England, that any description of the Hebridian dairy would be insignificant and superfluous. There is indeed nothing at all particular in it, excepting its extreme simplicity. Care is taken to drive the cows slowly to the milking fold, and to milk them with as much tranquillity as possible, though this is sometimes no easy matter. They are always milked to the very last drop, both because the last part is the finest, and because if any milk is left, it has a tendency to produce the *falling off* from the milk already stated. The pails containing the milk are carried with as little shaking as possible to a cool and clean milk-house, which is always well aired, and secured from the intrusion of poultry and domestic animals. The utensils in which it is kept are perfectly clean, cool, dry, and well aired previously to the milk being poured in. In order that the space of from 15 to 18 hours may suffice for bringing the cream to the surface of the milk in the pail, and for separating it effectually, the depth of milk in the pails is only 2 or 3 inches. As the first cream thrown up is always the best, it is desirable never to let the milk stand above 18 hours unskimmed. The milk should not be used for coagulation warmer than as it comes from the cow; it should indeed

indeed be barely so warm as to coagulate without difficulty. Much depends on the quality of the rennet which is applied. The old Hebridian custom, still common in Switzerland, Styria, and Salzburg, of mixing aromatic herbs with the rennet, has been some years ago recommended by the Bath papers :—" When the maw-skin (in which the rennet is made) is well prepared, two quarts (or common bottles) of pure water should be mixed with salt, in which should be put sweetbriar, rose leaves and flowers, cinnamon, mace, cloves, and, in short, almost every spice and aromatic that can be procured : boil them gently till the liquor is reduced to three pints (a bottle and a half) taking care it be not smoked ; strain it clean from the spices, and, when milk-warm, pour it into the maw ; a lemon may then be sliced into it, and remain a day or two ; after which it should be strained, and put in a bottle well corked ; and it will keep good for a year or more. A small quantity of it will turn the milk, and give the cheese a pleasing flavour."

Hebridian butter scarcely admits of improvement, being perhaps the very best in the British dominions, and equal to that of Holstein, Switzerland, or Upper Austria. The method of making it is universally the same, and has nothing peculiar in any of the isles. One of the best and one of the worst milk cows yield together, during the summer season, about two stone weight of butter, and four stone of cheese, at 22 pounds the stone ; sometimes in all seven stone, but seldom eight. The butter they afford is often more than one half of the quantity of the cheese, which shows the peculiar richness of the milk. The common price in 1808—

1809 was 14d. and from that to 1s. 6d. per lb. of the best butter, and from 4d. to 6d. the pound of cheese. The district never produces enough for its own consumption.

Of the various remaining subdivisions of this section it is unnecessary to treat, as nothing has been done in the Hebrides which throws any light upon them. Cattle are never weighed alive, nor is *the meat gained by food given* ever accurately ascertained; nor indeed would the inquiry be of any importance in the present state of those isles. Oxen are never worked. The few diseases * which annoy Hebridian cattle are invariably the result

* The black spall, or black-leg, (*Galic cearabhgorm*) prevails in most parts of the Hebrides, and frequently rages in the richest pastures. The disease seizes one of the legs, generally a hinder leg: It does not swell, but the animal becomes quite lame, and the leg has the appearance of being palsied. The animal's leg is found to be blue or blackish, and the flesh is flabby and unfirm. It cannot be perceived till the lameness ensues, and death speedily follows. No cure has hitherto been found for it. The disease is ascribed to gross feeding, or to poisonous plants, and many other causes, according to the different notions of the persons who examine it. But nothing at all satisfactory is known with regard to it. The preventatives are moderate food and plenty of exercise; and, above all, taking care that the cattle have easy access to wholesome water.

Cattle are also subject to what is called in Scottish, the *scour*, in *Galic gaused*, in which the excrements become quite liquid, and of a blacker colour than usual. It is generally

result of bad feeding and injudicious management, and gradually disappear in the improved islands, in consequence of the introduction of green crops and the raising of abundance of winter food.

SECTION

rally the effect of weakness, induced by scanty feeding; and is most frequent in spring and early in summer. Some persons allege it to be hereditary, in which case it might easily be extirpated; but the reason already assigned is the more probable one. It can be discerned some weeks before it arrives at a dangerous height, by a heaviness about the animal's eyes, and in its motions. The pasture ought to be instantly changed, and some more nutritious food than ordinary given. We have already mentioned the malady common in Tyree and some other islands where there is great abundance of rich summer feeding, viz. the disease called *bloody water*. It generally breaks out most fatally when the cattle are removed to the mainland in May or June. In these islands, they have not easy access to heather in winter, but feed upon sea weeds, &c. These keep them loose in the stomach, and this looseness is increased by the succulent herbage which they receive in May and June. If at this season they are removed to a hard, dry, heathy pasture, (which is usually the case), they always fall into this dangerous distemper.—Vid. Walker's Hebrides,

SECTION II.—SHEEP.

THE soil and climate of a large portion of the Hebrides suggest the rearing and management of sheep in preference to horses and black cattle. Nearly one-fourth of their surface consists of rugged mountains, abrupt precipices, dry islets, and such other sorts of ground as yield suitable pasture to no domesticated animals excepting sheep and goats. Yet it was not till lately that the natives turned their attention to sheep farming, and it is still followed only in very few districts. Hebridian farmers never thought of rearing sheep with any other view than merely supplying their own families with wool and mutton; and accordingly maintained only a very few of the common breed of the country, along with their stock of black cattle. They now, however, begin to perceive the propriety of keeping sheep stocks on the most rugged and extensive farms and districts, and rapidly follow the example of their countrymen in the adjoining highlands of Inverness, Ross, and Argyle.

1. *Breed*.—There are now three different breeds to be met with in almost all the larger islands, viz. 1. The native aboriginal breed, common to the whole Hebrides forty years ago, and still more numerous than the other two breeds taken together; 2. the *Linton*, or black-faced sheep of the south of Scotland; and, 3. the well known fine-woolled *Cheviot* breed.

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The native breed, or more properly, the Norwegian breed, (for it is the very same kind of sheep which we find over all the Norwegian coasts and isles that occurs in our Hebrides where modern improvements have not penetrated), has been the only kind known in these isles since the times of the Danish and Scandinavian invasions in the 8th or 9th century, till the present age. It is the smallest species of the sheep *genus* known in Europe; of a thin, lank, shape; and has usually straight short horns. The face and legs are white, the tail very short, and the wool of various colours*, sometimes of a bluish gray, brown, or deep russet, and sometimes all these colours meet in the fleece of one animal. Where the pasture and management are favourable, the wool is very fine, resembling in softness that of Shetland; but in other parts of the same islands, the wool is stunted and coarse, the animal sickly and puny, and frequently carries four or even six horns.

The average weight of this poor breed, even when fat, is only 5 or 5½ lbs. per quarter, or nearly about 20 pounds per sheeps. It is often much less, only amounting to 15 or 16 pounds; and the price of the animal, carcase, skin, wool, and all, is from 10s. to 14s. We have seen fat wedders sold in the Long Island at 7s. a-head, and ewes at 5s. or 6s. The quantity of wool which the fleece yields is equally contemptible with the weight of the carcase. It rarely exceeds one pound weight, and is often short of even half that quantity. The quality of the wool is different on different parts
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* *Vid. Walker's Hebrides, passim.*

of the body, and inattention to separating the fine from the coarse renders the cloth made in the Hebrides very unequal and precarious in its texture. The average value of a fleece of this aboriginal Hebridian breed is from 8d. to 1s. Sterling. From this account, it is plain, that the breed in question has every chance of being speedily extirpated.

Next to the native ancient breed, in point of numbers in the Hebrides, comes the black-faced or Linton, sometimes called the *Tweeddale* breed. The introduction of this species is a valuable improvement upon Hebridian sheep management. The Linton sheep is at least three times as heavy and three times as valuable as the Hebridian. Its carcase, when well fattened, weighs 16 or 17 lbs. per quarter; and its wool, though coarse, is four times as heavy as that of the common sheep. The face and legs are black, the body round and solid, the eyes smart, or even fierce, the horns crooked, and the whole appearance of the animal vigorous and active. This breed is fully as hardy as the native sort, yields excellent mutton, and possesses so many other advantages over it that it is not surprising if it rapidly gains ground in the country.

The third species now to be met with in the Western Isles, is the *Cheviot* fine-woolled breed. They are of a large size, rather longer, if not heavier than the Linton, have white faces and legs, long bushy tails, and no horns. It is commonly believed that this breed is raised upon the Cheviot-hills, which is as cold and bleak a district as any in Great Britain, but this is a mistake. They are reared in the richer and lower grounds of Northumberland, where they have good
shelter

shelter and abundance of food all winter. With good treatment, no sheep common in Britain give a better return; but they require shelter and plenty of food of easy access, otherwise they cannot prosper. Some farmers have lately introduced them into Arran, Mull, and Skye, and apparently with success; but they have not, as yet, been long enough tried to give evidence of their eligibility as a sheep stock in the Hebrides. It cannot indeed be said, with any degree of certainty, that they bear cold ill; but stormy winds, rains, sleet, and the sort of weather which is most frequent in the Western Isles in the latter end of winter and in spring, are found to be extremely injurious to them. Their lambs are almost bare of wool when dropt, so that if the weather happens to be unfavourable, and the Cheviot sheep are at a distance from shelter, these lambs frequently perish. The dams also suffer severely at the same time. It is observed that these sheep always run to the lower grounds, and to sheltered spots, on the appearance of bad weather; and while the Linton, or black-faced sheep, pay no sort of attention to the change in the atmosphere. The Cheviot breed are not only more valuable in point of wool, but also in being less liable to several diseases than the black-faced sheep. Their wool is to that of the Linton breed in quantity as 13 to 14, and in value as 3 to 1.

The Spanish or Merino breed has not, as yet, been introduced into the Hebrides; but it is probable that these isles will soon follow the example of Ross-shire, and the continental district of Inverness-shire, near the Town of Inverness, in adopting that valuable breed. They are as hardy as any sheep whatsoever, being pro-

tected by a thick, warm, fine fleece; and naturally bred for many ages in countries which lie at a great elevation above the level of the sea, and are as cold in the winter season as any part of the British dominions. Their carcase is very nearly as valuable as that of the Cheviot or Linton breed, and their wool incomparably finer even than the finest of the Cheviot species.

Sir George Stewart Mackenzie, Bart. has lately published, in addition to what Sir Joseph Banks had made known, some valuable information concerning Merino sheep, in a valuable "*Treatise on the diseases and management of Sheep*," printed at Inverness in 1809, and he has ascertained by experiment, as far as the time and circumstances could permit, that Merino sheep are very well adapted to our soil and climate.

There is little doubt, then, that the ancient Hebridian breed of sheep shall gradually disappear in that region, and be supplanted by the Linton, Cheviot, and perhaps Merino breeds, according to the shelter, food, and quality of the pasture afforded by the different isles. The following remarks, by the late Dr Walker, deserve insertion here, both as judicious in themselves, and as perfectly consistent with the facts, analogies, and reasonings, which occurred during our Hebridian tour.—“There is a breed that deserves to be noticed, and which of all others appears to be the most proper for the Highlands, if it could be procured, that is, the Spanish sheep. He is of a size greatly inferior to that of the Cheviot sheep, not much larger* than that of the

* Dr Walker here ascribes an undue superiority of size to the Cheviot over the Linton breed. Where both are well

the black-faced breed, and such as a good hill pasture in Scotland is able to support. He is horned, his body is full and well made, and, though his limbs are short, he is abundantly active. His face is not white, but of a uniform gray colour. He has a remarkable tuft of wool on his forehead, hanging down upon the eyes, and his legs are covered with wool even to the hoof. By these characters he is strongly distinguished from all other sheep. His wool is short, but extremely thick, and of the finest quality. He bears the greatest quantity of wool for his size. No animal of the sheep kind is capable of enduring more cold. He is clothed to resist a far more severe climate than that of Scotland. He is evidently robust and hardy, and better fitted for a mountainous country than any of the large English breed."

"Owing, as it would appear, to mere neglect, the Spanish sheep has never, even to this day, been established in France. Though it may be regretted, it is not surprising that it has never been fairly introduced into England*. A Spanish ram or ewe has often been brought over, but merely with the intention, by means of a cross, to improve the quality of the English wool.

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treated, and judiciously reared from properly selected parents, the difference of size is very inconsiderable, and rather in favour of the Linton breed.—Vid. Robertson's *Inverness-shire*, appendix, p. 416, in the answers to queries by Thomas Gillespie, Esq.

* This cannot now be said to be the case in either country. J. M.

The Spanish sheep is small, and his carcass is therefore no object of attention to an English grazier; but the case is quite different in Scotland. The sheep of Spain are of as large a size as our best sheep-walks can in general support, and their wool is the best that can be produced. It is, therefore, a breed better calculated for the hills of Scotland than for the champaign and rich parts of England. It ought certainly to be established in this country, but not merely by means of rams. In this way, only a mixed and mongrel breed can be obtained, which would soon wear out. A number both of Spanish ewes and rams ought to be imported, and, if they succeeded, as it is highly probable they would, the full breed, which is the great object, might then be propagated and spread in the country."

"The propriety of this measure appears from the experience of Sweden. In that country they have long been in use to import Spanish rams. The improvement which these make in the Swedish flocks is considerable, but it does not descend beyond the third generation. In this tract of time, which is not many years, the native blood comes first to predominate, and then to extinguish the foreign strain. A successive importation of Spanish rams becomes therefore necessary; and especially so from an opinion of the Swedish shepherds, which prevails too much with ourselves, *that the merit of the breed depends almost entirely upon the male*: No general and permanent alteration in our Scottish sheep can, therefore, be expected from a mere mixture of the Spanish breed, as the native stock must always in time prevail over it. If that breed is to become materially useful to the country, it must be introduced,

roduced, preserved, and propagated, pure and entire. In this way, it certainly promises to be the greatest improvement on the sheep farming in Scotland."

"It is certain that large sheep, removed to an inferior pasture, will degenerate in spite of all endeavours; and, on the other hand, that small sheep will improve when put upon a better pasture, without any particular attentions. From this it is held by some skilful storemasters, *that the pasture will of itself, without any extraneous breed, raise the sheep to that size which is proper for it*"

"This conclusion may be plausible, but it is certainly fallacious. If this was the case, it would be unnecessary to introduce any where a new breed, because it can be followed by no advantages which may not be attained by the breed upon the ground. But it is certainly too bold to say, that the practice of changing the breed of cattle, so universally followed in all ages and nations, is unnecessary; and rash to affirm, that no good consequences have ever arisen from altering the breed of sheep in a country, or upon a farm. The reverse, in numberless instances, has been found to be true."

"To know if the breed of sheep in your district or upon your farm may be mended, observe if in other districts or upon other farms, where the pasture is inferior, or but of an equal quality with your own, you can discover a better breed than what you possess. This is a discovery that may be often made, and renders it certain that your breed may be altered for the better, and rendered more profitable."

"With skill and care, a good breed of sheep may be preserved upon a farm, and even improved; when, without these, it would degenerate. For this purpose, the following rules are to be observed: viz.

"The ewe hogt, or ewes under one year old, must not be suffered to have lambs. The strongest lambs and the best breed are to be obtained from the ewes that have no lambs till the second, or even till the third year."

"That no ewes should be continued as breeders after the sixth year."

"That the early weaning of the lambs and the milking of the ewes should be abandoned, and the lambs allowed to be suckled as long as the ewes will suffer them."

"That the rams should be confined in autumn, to postpone the lambing time till the spring is as far advanced as possible."

"That a breed too large for the pasture should not be attempted."

"Besides other rules of management, the observation of these tend to preserve the breed of sheep upon a farm in vigour and perfection. But if they are neglected, let the pasture be what it will, the breed must diminish and decay."

"No animal, nor even man himself, is capable of enduring greater variety of climate than the sheep. Having been long domesticated in almost every region of the earth, he has assumed so great diversity in his form and characters, as to appear in one country almost a different species from what he is in another."

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“In a temperate climate and rich pasture, the sheep grows to a large size. The wool increases in length, in quantity, and in fineness; the face and legs are white, the tail grows to be very long, broad, and bushy with wool; the head comes gradually to be deprived of horns, and the ewe bring two or more lambs.”

“On the other hand, in a northern and mountainous country, where both the climate and pasture are coarse, the sheep dwindles in size. The wool diminishes in length and quantity, becomes hairy and of different colours beside white; the face and legs are black, or blotched with black and other colours; the tail decreases, and is covered with hair instead of wool; but the horns increase both in size and number; and the ewes bring only one lamb.”

“By extreme heat, the finest wool of a sheep degenerates entirely into hair, which is well known on the coast of Guinea and in the West Indies. In very cold countries, again, the wool changes partly into long hairs, but these at the base are intermixed with a thick short growth of the very finest wool. By these alterations, the animal, in the one case, is protected from the heat, and in the other, from the cold of the climate.”

“The sheep armed with horns are bold, intractable, and much given to fighting. The polled sheep again, or pollards, are mild, docile, and peaceable. The change of form and constitution by the want of horns, is evidently accompanied with a change of temper and disposition. The horned sheep, however, are more hardy, can better withstand the hardships of the weather, and are less subject to distempers than the pollards. The sheep also whose horns are rather

straight than spiral, are the hardiest of all, but their fleeces often are of the coarsest quality," &c.—Vid. Walker's Hebrides, vol. ii. p. 73. &c.

The two sorts, which are likely to divide the attention and cares of sheep farmers in the Hebrides for some years to come between them, are the Linton, or black-faced, and the Cheviot breeds. In our travels through these isles, we met with very different opinions concerning their respective claims, but we believe that they may be easily reconciled. The prominent characteristics of both are these: The Linton are more hardy, especially in resisting storms and rain, if not cold weather in general; they require rather less food and attention; their lambs are indisputably better clad at the period most critical for them, *i. e.* during the first ten days after their birth; and they defend themselves better than the Cheviot sheep against birds of prey. Their flesh is equally fat, or better upon the same feeding, and the quantity of pasture that maintains eight Cheviots will maintain nine Lintons. The weight and quantity of wool is nearly the same, as is indeed the whole carcase.

It is plain, therefore, that this breed ought to be restricted principally to the higher grounds of the isles, where they have abundance of range, and where the finer Cheviot breed cannot so well succeed. They ought to be pastured on the higher and more stormy islands, such as Rum, Jura, Mull, Arran, part of Skye, and the mountainous districts of Harris, Lewis, and South Uist.

On the other hand, the Cheviot breed has many good properties. It is a more docile, peaceable animal, takes easier with new pasture and a change of residence, and is consequently more convenient for stocking a new farm,
than

than the Linton. It strays less, and is much more easily prevented from destroying inclosures and hedges. The carcase yields good mutton, by some thought fully equal to that of the Linton breed, though not perhaps so easily fattened on the same pasture. But, what particularly recommends this genus of sheep, is the fineness of its fleece. The stone of wool of 24 pounds has this season (1809,) sold in Arran at 40s. while that of the Linton sold at 14s. They have frequently two lambs, and sometimes three at a birth*.

* Mr Cully thus describes a handsome ram ; " Head fine and small, nostrils wide and expanded ; eyes prominent, rather bold or daring, ears thin ; collar full from breast and shoulders, tapering gradually to where the neck and head join, which should be fine and graceful, being free from any coarse leather hanging down ; shoulders broad and full, joining so easy to the collar forward and chine backward as to leave no hollow in either place ; mutton upon arm or fore-thigh quite to knee ; legs upright, with clean fine bone, equally clean from superfluous skin and coarse hairy wool, from the knee and hough downwards ; breast broad, and well forward, to keep fore-legs at a proper wideness ; girth or chest full and deep, and instead of a hollow behind the shoulders, that part by some called fore-flank quite full ; back and loins broad, flat, and straight, from which the ribs must rise with a fine circular arch ; belly straight, quarters long and full, mutton quite down to hough, which should stand neither in nor out ; twist or junction of inside of thighs deep, wide, and full, which, with the broad breast, keep the fore-legs open and upright ; thin pelt, covered with fine, bright, soft wool,"

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This breed should be in possession of the richer and warmer Hebridian sheep-pastures, and especially such as, on account of their local situation, are not much exposed in April and May to violent rains and storms. Such pastures are found in the Southern Isles, some parts of Skye and Mull, and especially in Arran, Islay, and the Isles to the south of the point of Ardnamurchan.

2. *Food.*—The only food ever yet given in considerable quantities to sheep flocks in the Hebrides, is the herbage which they can pick up for themselves; neither hay nor turnips, nor any other sorts of provender being prepared for them. On a few islands, indeed, and by a few farmers in those islands, some turnips have been raised for them within the last 6 or 7 years, but the quantity is so inconsiderable in all the isles, (not exceeding 30 acres,) that it scarcely merits notice. The benefit, however, has been so sensibly felt, by the few who have availed themselves of it, that others will probably follow their example. The quantity of Hebridian pasture allotted to a sheep has never been accurately ascertained. It varies from two acres to one quarter of an acre, according to circumstances. While a gentleman farmer feeds high for his own table, and allows each sheep an acre and a half of good pasture all summer and autumn, the poor tenant or sub-tenant crowds two or perhaps three or four sheep upon one acre; so that no general estimate on this subject can be made.

In winter the Hebridian sheep enjoy some advantages over the continental flocks, *i. e.* they are seldom or never annoyed by snow storms, and they have access to sea weeds upon the shores. It is a very rare occurrence

to

to lose any of them by wreaths of snow, or the severity of the cold, and consequently those extensive calamities, so frequent in other parts of Scotland, of thousands perishing in one stormy week, are unheard of in the Western Isles. In consequence of the mildness of Hebridian winters, sheep have access at all times to heather, sprats, and rushes; and they often, too, as just stated, frequent the sea-beach for the purpose of picking up and eating sea-weeds, when other food is scanty.

As no regular system of feeding is adopted, it is unnecessary here to follow the arrangement recommended by the Board of Agriculture for the reprinted reports, in detailing the food of sheep throughout the different seasons of the year. They have nothing (generally speaking,) but what they can procure from bleak fields and mountains for themselves, and are never fat excepting for a month or two towards the fall of the year.

3. *Management.*—The management of sheep farms is different on the different islands. Mull and Jura are those in which the south country management was first adopted. Skye and Lewis now follow the same plan. Of that system the Board has already received a complete account from different reporters, but especially from Dr Douglas in his Survey of Roxburgh and Selkirk, and from Mr Findlater's Report of Peebleshire. It is true, that the Hebridian plan is not quite so regular and methodical as theirs, as yet, but it is an imitation which will year after year become more complete.

It is disputed by many whether salving be upon the whole advisable. In the Hebrides, that process is beyond

beyond doubt more necessary than in any other district of Scotland. . The sheep ought to be salved or smeared every year, towards the end of autumn, with a mixture of 12 Scots pints of tar, melted with about 30 lbs. of butter, for five score of sheep. . The wool is shaded aside in longitudinal* rows from head to tail, the salve spread thin by the forefinger of the operator on the bare skin, and these shades are repeated at small distances, till the whole body of the animal receives a regular thin coating or smearing of the salve. By this the sheep are in a considerable degree protected against rain and cold ; and the ticks, keads, or insects, which infest and torment them, are either entirely destroyed, or at least greatly diminished in numbers.

As the period of gestation is 21 weeks, the Hebridian farmer calculates in such a manner, that the lambs must appear towards the middle or latter end of April, and not sooner. This is a matter of importance, and which in former times was not much attended to, but the destruction of whole flocks by violent winds accompanied with snow and sleet in the beginning of April, frequently recurring, has taught them some caution. One ram is thought sufficient for 36 or 37 ewes. Castration takes place at the age of 26 or 27 days. One half of the stock upon a breeding farm, when enumerated at the time of salving, is generally supposed to consist of ewes from which lambs are expected the following season ; somewhat more than two thirds of the other half are wedders, young and old, and the remainder
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* Vid. Kerr's Berwickshire, p. 388.

are ewe hogs, or year olds, to supply the place of such old ones as may be sent to market during the next year, either because of their missing a lamb, or of their growing too old for breeders*.

4. *Wool*.—From 20 to 30 fleeces of the aboriginal breed go to the stone of 24 lbs. Dutch weight, but eight or 10 of the black faced or Cheviot make a stone. The Hebrides have been from time immemorial in the habit of importing wool from the Scottish continent, and sometimes from Ireland; but it is supposed, that, in consequence of the recent introduction of the Linton and Cheviot breeds, they shall be able to cloth their own population, and also to export to other districts a considerable quantity of wool or of manufactured cloth. The woollen manufacture was indeed tried *unsuccessfully* about 60 years ago, by the members of a well known patriotic society in the Highlands of Ross and Inverness, and also by the late Duke of Argyle on his estates; but yet there is good reason to hope, that the improvements which have taken place subsequent to those attempts, and especially the circumstances of possessing abundance of the raw material, and of having a more direct and regular communication with the low country of Scotland, may cause this manufacture now to prosper, although it failed in less favourable times. The cloth now made by Mr Young of Inverness, and sold by him at a moderate price, is a sufficient evidence of the favourable change which has in this respect taken place in the Highlands.

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* Vid. Douglas' Survey of Roxburgh, p. 154.

The price of wool is entirely regulated by the great Scotch and English markets; for the communication with the places in which these are occasionally held is regular and uninterrupted. At an average, however, wool is nearly 10 *per cent.* dearer in the Hebrides than in Fort William, or in the Northumberland and south country markets; and it is sometimes accidentally in very short supply.

The stapling of wool is now begun to be better understood than usual, and has been lately much promoted by the judicious and patriotic efforts of the Highland Society. Mrs McNeill of Collonsay has, for some years, set a very useful example in stapling and preparing wool for use among the families on her husband's estate, and particularly in teaching them to wash and dress it in a more expeditious and effectual manner than they had formerly practised. The fine is separated from the coarse *before washing*, and the former then washed with the care and attention which its superior quality and value demand. Her exertions, in this respect, are likely to improve the woollen manufacture in her neighbourhood, more than it had been by all the encouragement formerly granted by the public.

5. *Distempers.*—The native breed of sheep in the Hebrides had in former times no particular distemper, such as those which annoy the storemasters of that district of late years; nor indeed can it be said, that the braxy, rot, itch or scab, and other diseases, of which so much has lately been said and written in Scotland, are so troublesome there as in other parts of the kingdom. On the contrary, instead of losing an 8th or 9th

9th part of a stock annually *by diseases*, we found that, at an average over all the larger Isles, not one farmer out of ten lost, by *that casualty*, *one twentieth* part of his flock.

As no distempers are peculiar to this region, and as so many other reports printed by the Board of Agriculture contain all the information which we possess on the management of diseased sheep, we shall enter no further on this subdivision, but content ourselves with observing, that where sheep are well fed and carefully sheltered from storms and rains in the Hebrides, they have little to dread from any other enemy than the thief, the eagle, and the fox *.

6.

* Since writing the above, it has been hinted to the reporter, that the following passage from Sir George M'Kenzie's book may prove useful: "The scab, or itch, an infectious, troublesome, and destructive disease, is well known. It seldom appears among sheep which have been smeared; and when it does, it proceeds, most probably, from the touch of a diseased animal, of a stone, or a tree, or paling on which scabbed sheep have rubbed themselves. A sheep is never even slightly affected but it proceeds to scratch itself, and to rub its sides and buttocks against every thing it meets. As soon as the disease is discovered, the whole flock among which the scabbed animal has been pasturing should be carefully examined; and every one which has an appearance of being fretted on the skin must be taken away to be cured. Several ointments have been proposed for the cure of this disease; and that of Sir Joseph Bank's seems to have been
most

6. *Numbers kept on different spaces of land.*—In former times, the souming of sheep fixed for a specified quantity

most approved of. His prescription, however, can only be made by an apothecary, a personage not always at hand, and who may not always have sheep ointment ready when wanted. Every apothecary has abundance of mercurial ointment at all times; and if a shepherd purchase a quantity of it, to be kept by him, with a little oil of turpentine, he may always have it in his power to make up an ointment when he requires it, and of such a degree of strength as he may judge proper.

The following directions may be found useful.

Take of strong mercurial ointment,	-	4 lib.
oil of turpentine,	-	$\frac{1}{2}$ pint, Eng.
hogs lard, tallow, or butter,	-	4 lib.

Melt the hogs lard, or butter; allow them to settle, and pour off the clear liquid; and then add the mercurial ointment, stirring the whole well, till it be melted and incorporated, and then add the oil of turpentine. Keep stirring the mixture for a minute or two, that the mercury may be completely mixed, and then pour the whole into some shallow vessels, that the ointment may cool quickly. If the mercury should appear to have sunk when the ointment is cold, it may be rubbed a little with a smooth flat stick on a plate. But there will seldom be any occasion for this, if the process be well managed.

A very effectual, and a much cheaper ointment, may be made as follows:

Take of corrosive sublimate,	-	8 oz.
train oil,	-	6 gallons, Eng.
rosin, (black or yellow,)	-	2 lib.
tallow,	-	2 lib.

quantity of pasture, was not in proportion to the extent of the ground in measured acres, but to the number of cattle usually allotted to the ground in question. Six sheep were supposed to require the same quantity of grass with one cow, and eight or sometimes 10 sheep, the same with a horse. The proportions have now

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changed,

Let the corrosive sublimate be reduced to a fine powder, and mixed with a portion of the oil. The rosin, tallow, and remainder of the oil, are to be melted together over the fire, and the sublimate afterwards added.

If this mixture should be thought too thin, the proportion of oil may be diminished, and that of the tallow increased. Were one or two pounds of powdered white hellebore to be added, it would improve both the consistence and efficacy of the ointment. One pound of sublimate, at 10s. will, in this way, go as far as 50 pounds of mercurial ointment at 3s.

If the wool be not taken off, either of these ointments, or that of Sir Joseph Bank's, is to be laid on, in the same manner as smearing stuff, beginning with a line along the back; one is to be laid on each side, and one down each leg. The neck, inside of the thighs, and belly, should have a share. In every case, however, the wool should be shorn, except during very cold weather, and the animal washed and brushed with soap and water, before the application of the ointment, which may now be applied all over the body. The mercury will have more effect, and less of the ointment will serve, when all filth and loose scabs have been removed by the washing. What is recommended in another part of this work, viz. anointing the sheep after being shorn, will be found a very effectual means of warding off the scab, and every disease of the skin.

changed, but the same fluctuation and vagueness continue with respect to the quantity of ground allotted to a certain number of sheep. The profits from a full grown sheep may however average 5*s. per annum*; and as grass lands, such as are depastured by sheep, rarely exceed a rent of 2*s. 6d.* per acre, we may assume the medium average over the Hebrides, exclusively of rugged mountains, at two acres for every sheep.

The number of sheep in the British Isles, is supposed rather to exceed 30 millions, of which five millions perish by distempers and mismanagement annually. The quantity of moor, hill, mountain, and downs pasture, which maintains 20 millions of those sheep, is not believed to exceed 10 millions of acres; so that an acre supports two sheep on natural pasture; in inclosed rich grounds, whether natural or artificial, two acres will feed five sheep, even of the larger breeds. In the Hebrides the number of sheep of every description is rather short of 100 thousand, and the ground allotted, (or which might be allotted) to them exceeds 600,000 acres, or nearly one third of the surface of the country, and affords a little more than six *nominal* acres to each sheep. It is true, they share even this description of ground, which is nominally in their exclusive possession, with a few straggling horses, cows, and goats, and in some islands with herds of deer, but the number of these is too inconsiderable to be taken into account in any calculation respecting the wastes of the Hebrides. Great as the extent of ground is, which is thus allotted to sheep in the district under review, so bad is their management, that numbers die of cold and hunger every season; there is no doubt, however, of the Hebrides
being

being able to maintain five times their present number of sheep without any prejudice to their agriculture or population.

The means of turning the wild lands of the larger islands, viz. Lewis, Harris, Skye, Mull, Arran, Jura, Rum, and South Uist, to good account by sheep farming, are now sufficiently obvious; and, indeed, followed out lately in the first mentioned of these islands, by Mr Mackinnon of Corry, Captain Reid, and Mr Downie of Lochalsh. These gentlemen have indeed had serious difficulties to encounter as the first beginners of a new system in a country not-celebrated for the good police and regular conduct of its inhabitants; but as they are men of good sense, spirit, and perseverance, and as the better ranks in Lewis must gradually perceive that their own interests are involved in their success, and will consequently give them every aid in their power, it is to be hoped that they shall ultimately succeed in the same manner as the Skye, Jura, and Mull sheep farmers have done. To promote this object, men of property in the Hebrides ought to join in perfecting the police and interior administration of their isles; they should give every possible encouragement to south country store-masters to settle among them; never listen to the silly and puerile conceits of declaimers upon depopulation, expatriation, emigration, and such like bug-bears; which are always meant either to convey favourable notions of the humanity of those who use them, and, consequently, earning a little popularity at the expence of reason and common sense; or perhaps intended to excite discontent and create mischief in the country. If any thing be at all certain in

political economy, it is this, "*a country must be prosperous and powerful in proportion as its population exerts itself in turning to the best account all the resources which it offers, whether these depend upon soil, live stock, fisheries, trade, or manufactures; and the man is an enemy to the commonwealth, who attempts forcibly to exclude any of them from any portion of the country in which he resides.*" There are few subjects on which indignation is so legitimately roused as the one now under consideration. Sheep farming has too often been a popular theme of reprobation in the Hebrides, and the poor ignorant natives of the island al- luded to fancied that the introduction of this most useful of animals into their country, was the signal for beggary and exile. They accordingly listened for a time to the mischievous suggestions of impostors; and did all in their power to prevent what, if understood properly and managed skilfully, must soon add in an eminent degree to their maintenance and comfort.

SECTION III.—HORSES.

1. *Breed and breeding.*—Nearly the same arguments may be used with respect to horses as to cows in the Hebrides. The native breeds of both are excellent; and may by a judicious selection of breeders and by good
good

good treatment, be carried to a high degree of perfection without any foreign admixture. This is indeed the case in Islay and on some gentlemens farms in the larger Hebrides, where much attention has lately been paid to the rearing of them. The Hebridian breed of horses resembles that which we find in almost all countries of the same description of climate and surface. It is small, active, and remarkably durable and hardy. It possesses the prominent marks of perfection in this sort of animal, *i. e.* it is strong and nimble, of a good form and proper size for its work, healthy, patient, good tempered, and very easily kept in good condition. It is found in the Highlands of Scotland, in Wales, Norway, Sweden, Switzerland, Tyrol, Hungary, and Transylvania, and, with little variation in shape and size, in all the hilly districts of Europe. The average height of what are deemed sizeable horses is from 12 to 13 hands, but that of the lower tenants horses in Mull, Jura, and the northern isles, rarely exceeds 11 or 12 hands. They are handsomely shaped, have small legs, large manes, little neat heads, and manifest every symptom of activity and strength. The common colours are grey, bay, and black; the last mentioned colour is the favourite. Excepting in Islay and on a few gentlemens farms, not exceeding two dozen in number in all the Hebrides, very little has hitherto been done for bringing this breed to perfection, or preventing it from degenerating. In general, the tenants pay no manner of attention to their stallions or breeding mares, but leave them almost entirely to chance. In summer and early in autumn, one-half of their horses and mares

range freely and unconfined amidst the mountains, whence they are not brought to the different farms and hamlets for work until the harvest is ended, the crop to be carried home, and the peats or fuel to be secured. They are then hunted after, like so many wild beasts, and each tenant or proprietor endeavours to procure his own, which he has not perhaps seen for many weeks before. They are driven into inclosed fields or pen-folds, frequently into bogs and morasses, before they can be laid hold of, and sometimes injured severely in the process. Their manes are then cut, the hair laid up for rope-work and other purposes, and the young horses are gradually broken in for the labours and cruel hardships of winter. Very few are housed, or in any other way protected from the inclemency of the weather and the rigours of a scanty and unsheltered pasture, than merely by a winter inclosure fenced with a miserable turf-dyke or wall, along the sides of which they stand shivering with cold and half famished with hunger, the live-long winter nights. Any horses brought from other districts of Britain, to undergo this treatment all at once, fall off rapidly and soon perish. This description, however, applies more particularly to the Long Island, than to any other part of the Hebrides. That district maintains, or more properly speaking, torments, about 7000 horses annually, while the provision made for them would not support 2000, in any tolerable manner. The rest of the Western Islands, taken together, contain about 10,000 horses; which excepting those of Mull, Tyree, and Jura, are rather larger and better managed than those of the Long Island. They are all of the same
breed,

breed, probably imported originally from Scandinavia, although now apparently of different breeds in consequence of their long separation.

Some people fancy that the breed of horses in Mull and in Tyree, has been modified by an intermixture with Spanish horses cast ashore on these coasts in 1588, on board the *Florida*, a ship of the line belonging to the Armada, and which was destroyed in the harbour of Tobermory in Mull. But this seems to be mere conjecture, for we have no accounts of any horses having been saved from the ships of that fleet; and even although some had escaped and been divided among the natives, it is not likely that their progeny would preserve their characteristic marks for 220 years, in a country where they must have mingled indiscriminately with the native race, and, consequently, have been, in 14 or 15 generations, completely absorbed by them. That the Hebridian breed, especially that which is kept unimpaired and undegenerated, and commonly called *gearran* in Gâlic, is admirably calculated for the soil and climate of the country, is evident from what has occurred in Islay, and has been already stated in this report*. Mr Campbell of Ballinaby has a regular succession of *gearrans* for the plough, cart, and saddle; for all which purposes they answer extremely well. They are as susceptible of modification and variety within the limits of the same breed, as the celebrated *Suffolk punches*; perhaps the most serviceable sort of horses in Europe. He rears them accordingly from

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dams of various forms and sizes, but an uncommonly handsome middle sized stallion which is fit for any of the above mentioned purposes, and he gets almost any price he demands for his young colts. Twenty-five, thirty, and even forty guineas, are no uncommon prices for Islay gearrans 13 or 14 hands high; and numbers of them are annually exported even to Galloway and Ireland.

Mr Campbell of Shawfield keeps some uncommonly handsome stallions, and excellent breeding mares, on his Islay estate, and has conduced very essentially to the improvement of horses on that fine island. It will be some years, however, before the northern and less improved Hebrides can follow his example in this important branch of agrestic economy; but in order that Hebridians, into whose hands this Report chances to fall, may have an idea of British horses in general, and chuse for themselves accordingly, we here subjoin what Dr Coventry says about them in his "*Introductory Discourses on Agriculture and Rural Economy*," p. 148. &c.

"The domestication and use of the horse, *equus caballus*, Linn are among the noblest and most valuable, though perhaps not the most difficult acquisitions which have ever yet been made by the address and industry of man. The strength, agility, hardiness, and withal the tractable nature of the horse, place him in the highest rank of our useful animals. Such is the docility and speedily acquired mildness in the dispositions of this species, that even the rudest races of them, and the fiercest individuals among these, if taken young, are found to be quite manageable, can soon be rendered tame,

tame, gentle, and fit for being employed in the service of man.

“ The horses in Great Britain consist of a variety of breeds, or distinct races, which have likely been imported at different periods of time, and some of them very remote, not only from various parts of the Continent of Europe, but from other quarters of the world. These breeds, too, are probably all now more or less mixed, though several of them still retain, in a high degree, the distinguishing qualities of their progenitors, in consequence of attention having been paid to preserve, and perhaps to improve, their original character.

“ Among the horses of the present time, most distinct in their form and properties, several sorts found in Great Britain deserve attention. The *race horse* consists of several families, which are perhaps all of them now more or less intermixed, but of which the parents were mostly all brought originally from countries abroad, as appears in the attested pedigrees of the most noted and best of them terminating in some celebrated foreign horses. Since their introduction into this island, and particularly since royal plates, purses, and other rewards were given at the races in different parts of the country, a great deal of attention has been bestowed on the breeding and rearing of such. Nor have the attempts to improve the appropriate qualities of horses of this class been either devoid of merit or unsuccessful. The large heavy black horses, chiefly adapted for the dray or waggon, are another distinct set, composed of breeds that are probably somewhat different ; some of them being of a size and figure less coarse and large than others. The history of certain families of such a
heavy

heavy *fen breed* is not incurious, and tends to shew that breeders of great eminence and merit in one line, in that of sheep and cattle for example, may commit serious blunders in relation to other live stock, by bestowing preference and care on sorts comparatively worthless, and even for the purposes intended altogether unsuitable. In England, there is likewise another sort, better adapted for ordinary purposes, whether of riding or draught, than either of the foregoing, those bred chiefly in Yorkshire, and known under the name of *Cleveland bays*. These, by many held to be a cross progeny between some of the imported blood horses and the old sort in that district, furnish, by proper selection and coupling, kinds suited for different purposes, such as hunters, road, coach, or farm horses. The breed common in the counties of Suffolk and Norfolk, the *Suffolk punches*, are a plain, thick, stout, active, hardy, and easily kept sort, and sufficiently adapted for the works of husbandry. Though not so tall and agile as the last mentioned, they are reckoned fully as strong for labour, and as durable. The horses in the west of England seem to be mostly of two kinds; one of them a mixed race, probably sprung from the old and rather small sized breed, coupled with stallions generally of late from the north and east of England; and the other, that old or prior breed, less mixed, and now principally to be found near the hilly and wilder districts. Perhaps some of the more diminutive class of these may have been intermixed with the *poney breed*, which is still retained in Wales, and which were probably preferred, at one period, in all situations where a scanty

scanty supply of provision rendered small hardy horses necessary."

" In Scotland, notwithstanding the promiscuous breeding which too generally prevails, remnants of a very primitive race may be found in upland and secluded quarters, where fewer changes have yet taken place, and where these horses have been retained as fittest for the situation, in respect to both their work and their forage. This breed, the *garrons*, or *gerrans*, from being ill kept, and too early and severely worked, in some parts, have a coarse, feeble, and deformed appearance, and stand badly on their legs ; but when decently used, they look well, are steady on bad roads, whether rocky or miry, and though under sized * for a two horse plough, are stout, active animals. In the county of Lanark, there is a very useful description of horses, which are well known in most of the arable districts of Scotland, where they are preferred to most others by the farmers, being of a suitable size, (generally weighing about 900 pounds, and being rather under 15 hands high) plain, but not without mettle, strong, docile, and seldom ever known to be restive. This favourite Clydesdale breed is, like many others, of a mixed origin. Another smaller sized, lighter, but active and valuable sort, especially for the road, called the *Scotch gallopways*, but a foreign and probably Spanish breed, it is to be regretted, are now few in number, and debased by mixture. The small horses found in many parts

* This is not the case in Islay, and where any attention is paid to a proper selection of breeding couples. J. M.

parts of the Highlands, are perhaps, as some conjecture, of the early garron breed, tolerably pure, but reduced in their size; or they may be a mixed progeny from these and the diminutive breeds found in Caithness, Shetland, Orkney, and the Western Isles. It is even likely that the latter have been mixed with some foreign horses from the north of Europe, when the Danes had frequent communication with that quarter *. However this may be, such breeds have abounded there for times beyond record. The *eel back* horses (those generally of a dun, or more rarely of a light bay colour, with a black line along the middle of the back, from the mane to the tail,) supposed to have come from Norway, vary a good deal in their size and shape, and have an equivocal character, owing, no doubt, to their having undergone a diversity of treatment and indiscriminate mixture. All, or most of these under-sized breeds, where they are properly taken care of, have a good figure, fine bones, and are nimble, sure footed, indefatigable and easily fed. It is not meant, however, by this remark to insinuate, that such kinds are fit for many purposes or situations, and are not in general an unprofitable keep. Nevertheless, wherever these, or any sort of live stock, are retained, they should never, as is too often the case, be exposed to gross neglect, and abuse, whereby they become degenerate and less useful.

* That Dr Coventry is right in this conjecture, appears from comparing the Hebridian with the Norwegian and smaller Jutland horses. They are precisely the same in figure, size, and appropriate qualities. J. M.

ful. From the vast number of horses in Great Britain, there being in it above *two millions* of one sort or other,—from the general employment for various purposes, and from the growing demand for them of late years, notwithstanding its occasional or local slackness,—the breeding and rearing of these must become an important object with husbandmen in many districts," &c.

The breeding of horses for sale is not carried on to a considerable extent in the Hebrides, nor does any of them export at an average of ten years more than it imports, excepting Islay, and perhaps Arran and Eigg. Islay exports nearly 200 head annually, which average L. 5. each, there being a considerable proportion of them old, small puny creatures, sold to Irish dealers by the lower Islay tenants. Some, however, are sold at L. 30 or L. 35 and upwards, and afford undoubted evidence that the breeding of horses might be carried on to great advantage in the Western Isles. The most intelligent farmers in Islay agree with Dr Coventry in the principles which he recommends to be observed in the breeding of horses, viz. 1. The properties of the parent stock deserve prime attention. The kind of animals coupled together ought not to be of very different habits and sizes, or in any other respect unsuitable matches. None should be allowed to have progeny too early in life, or before they have attained maturity in form and strength. 2. Nursing mares must be tenderly managed, as well as their foals, otherwise all the previous care bestowed must be lost. 3. In training young horses, gentleness and judicious application of punishment are indispensibly necessary. They should be gradually made tame and familiar. Whatever frets
or

or alarms a young horse should be carefully avoided or removed. He should not on any account be put to hard work all at once, or have his strength tried before he is perfectly acquainted with harness, and in some measure familiarized with the voice of his employer.

4. Young horses of opposite tempers and dispositions should not (if possibly avoided) be employed together in harness, but associated with horses of similar properties and qualities with themselves. 5. Horses should be as well fed and sheltered from cold and wet as possible during the first two years of their lives, in order to lay the foundation for the spirit and vigour which constitute their after excellence.

2. *Number kept to space of land.*—This is extremely various, according to the situation and staple productions or manufactures of the different isles. The small island of Tyree keeps 1500 horses, or very nearly as many as the great Isle of Skye, which is about 20 times its superficial extent, at least 10 times its value, and maintains nearly seven times its population. On all the kelp islands we found a swarm of small half starved horses, sufficient of themselves, without the aid of other live stock, to consume the herbage of these isles. They are at least thrice as numerous as they ought to be, and probably thrice as numerous as they shall be in twenty years hence; for the best informed farmers of the Hebrides begin gradually to perceive and to correct the error into which they have long continued to run.

The average numbers kept on the kelp islands are probably one horse to three acres of green or meadow pasture,

pasture, and on the other isles one to nine or ten acres, in conjunction with other descriptions of live stock. In this estimate we do not comprehend the mountainous or moorish tracts, which are depastured by mingled herds of yeild cattle, sheep, horses, and deer, during the summer and autumn; and which, as in Lewis, and some others of the larger Hebrides, are reckoned a commonity for the live stock of all the inhabitants without distinction: we mean merely the ground either within the head-dyke, which separates the mountainous districts from the cultivated, or such other portions of the pasture of each farm as is deemed valuable, and is accordingly appropriated and protected. As no Hebridian, however, keeps a specified quantity of pasture or of any other food for his horses exclusively, we cannot, with any pretension to accuracy, state the *number of horses kept on certain spaces of land*.

3. *Work performed*.—In Gigha, Islay, and Collonsay, and on a few farms in Skye, already mentioned, and in which the improved system of agriculture has been introduced, we found that native *gearrans*, one pair to each plough, could manage an acre per day in April and May, without any great difficulty or fatigue. The working of horses is so precarious, irregular, and desultory on the other islands, that it is not worth mentioning. Three-fourths of them are employed in carrying burdens in baskets or creels on their backs, instead of being harnessed in carts; consequently their work must be equally trifling and arduous.

4. *Food price*.—It is scarcely possible for a Scots lowlander,

lowlander, or for an Englishman; to believe the cheapness of an Hebridian horses' keeping. Indeed the English language has no term for expressing the existence to which these unfortunate animals are doomed in this district. They are not only ill used, and overwhelmed by work beyond their strength, during the winter and spring months, but also starved with hunger, drenched with rain, unsheltered from sleet, snow, and storms; and in a word, as miserable as is possible for animal feeling and animal life. The quantity of food allotted to an Hebridian tenant's horse at an average of ten years (excluding the riding horses of gentlemen and farmers, which are not above one-thirtieth of the whole) would not fetch L. 4. per annum. In Berwickshire it is from L. 30 to L. 40 * or to that consumed by an Hebridian horse as 9 to 1. The food given to horses in the Hebrides in winter is straw and hay. Oats are rarely granted until the seed time commences in April, and even then in very small quantities, at the rate of a lippy, or $\frac{1}{4}$ peck for each horse morning and evening. Their principal dependance is upon what they can procure themselves from the bleak fields and moors on which they are pastured. On the kelp estates, and generally speaking, in the Long Island, they are miserably ill treated, and accordingly have dwindled in size far beneath the horses of Skye, Islay, and the isles which are not placed upon the kelp footing. The grazing of a common tenant's horse, exclusively of his winter provender *from the hand*, is usually valued at L. 1.

15s.

* *Vid.* Kerr's Berwickshire, p. 407.

15s. that of the better sorts at L. 3. and in the improved isles at L. 5. 5s. per annum.

5. *Expence*.—On many of the isles, especially those in which considerable quantities of kelp are made, and where fuel is difficult of access, the expences attending horses are very great, amounting to one fourth of the total family expences of the tenant. This is not merely the expence of maintaining his horses, but also that which arises from the loss of some of them by distempers or accidents. Such losses occur very frequently, and occasion great distress. Perhaps one-tenth of all Hebridian horses die annually; a sure proof of the mismanagement and abuse of those generous and noble animals. The expences, however, which attend horses in this extensive region, under the different heads enumerated in the plan of the reprinted reports, such as food, shoeing, decline in value, and harness, cannot be accurately stated; because on some islands, the food and harness cost scarcely any thing that can be specified, —*they are not shod at all*; and, as their lives are at all events extremely precarious, they sell nearly at the same price from the age of six to that of sixteen years.

6. *Distempers*.—Horses so ill managed as those which we find on almost all the Western Isles northward of Islay, must suffer severely from distempers. These are indeed numerous, and many of them fatal. The most pernicious by far, and that which destroys more than all other distempers united, is the *cholic*. It is called by different names in the different islands, such as Graimminnich, Tochg, &c. It is well described by

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Mr Lawrence in his philosophical and practical treatise on horses ; “ The primary cause of a common fit of the gripes in a horse is, nine times out of ten, an accumulation of indurated excrement in the intestines ; for, independently of the solid obstruction so occasioned, the usual proximate causes would seldom have power to work those serious effects we witness : thus, in a horse, the colon of which was not previously *infarcted* and plugged up, the effect of a slight cold thrown upon the bowels, or the devouring a few new beans, would probably pass off with a very moderate struggle from nature. The symptoms scarcely need description. Cold dew at the ear-roots and flanks ; frequent pointing to the seat of complaint, and a desire to lye down and roll ; sudden rising and great agitation ; the greatness of the agitation, or rather jactitation ; no convulsions existing ; seems to form the diagnostick in all cholicky complaints.”

“ The *Cure* requires prompt and vigorous measures, and plenty of assistants to conduct them. Loose stable, or out-house, well littered down, that the horse may have room to roll himself without injury. Clothe with warm dry clothes. Man to attend the head, that it be not beat against the pavement or wall ; another or two, to rub the belly well at every quiet interval ; a more effectual help than generally imagined to disperse the wind. Bleed, if possible, in the neck veins, not only to ascertain the quantity, but because, surely it cannot be irrational to suppose such a substance as blood improper to be taken into the stomach, under the circumstances. Whilst medical remedies are preparing, walk
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the horse briskly about in hand, one following with a whip, to keep him to the jog-trot ; but drive him not fast, or harass him, on any pretence, which has ruptured the belly of many a horse, and which at least often inflames and exasperates the symptoms. Back-rake with a small hand well oiled, and give the common gruel glyster, with half a pint of oil and a large handful of salt : immediately pour down by the mouth half a pint of Hollands Geneva, rum, or brandy, and a like quantity of sweet oil mixt, or a little diluted with thin gruel, if thought too strong : keep the horse on his legs, and exercise him forthwith. If to be obtained soon, and demanded by the exigence, add to the glyster four or six ounces of Glauber's salts, or of tincture of jalep, or of senna, two ounces, or best aloes, in fine powder, half an ounce ; and to the drink three or four ounces syrup of buckthorn, or *elixir proprietatis*, or *tinctura sacra* : castor oil may be used instead of olive ; a notched onion may be thrust up the fundament ; afterwards a glyster of black soap, one ounce to a pint of warm water. Should suppressed perspiration thrown on the bowels be among the causes, the warm seeds, ginger, castor, and camphor, should make part of both the drinks and glysters. For a large cart horse, where wind is not the predominant symptom, and no appearance of cold, the following drink : gin, brandy, or rum, and sweet oil, one pint each, mixed with the solution of six ounces Glauber's salts ; repeat in two three hours ; warm gruel in the interim. The repetition of these must be left to the judgment of the practitioner ; but plenty of warm gruel and warm water should, in these cases, be always at immediate call, as sometimes the

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throwing

throwing in two or three gallons of these, at both ends, and at proper intervals, will do the needful, without any assistance from the apothecary. *Bracken* cautions against the common practice of farriers, who give large quantities of Venice treacle, mithridate, or diascordium, both by way of drink and glyster, upon loaded intestines; thereby locking up the cause of the disease still more securely. He compares it to firing a pistol into the horse's fundament, by way of clearing all obstructions at once. Mashes: a week after the cure, a gentle purge or two."

SECTION IV.—ASSES.

CONSIDERING the hardy nature, the abstemiousness, cheapness, and longevity, of this useful animal, it is surprising that it has not been introduced into general keeping in the Hebrides. An ass lives three times the usual life of a horse. It carries much heavier burdens, in proportion to its size and strength, and requires only half the food; while at the same time he is equally serviceable where no carts are used, and much more manageable, and less liable to distempers. On the kelp estates, in which small horses are employed in carrying sea-weeds amidst loose stones, rocks, and precipices, the ass would be peculiarly proper, being still more patient and

and sure-footed than even the Hebridian poney, and able to carry much about the same burden from the age of 3 to that of 60 or 70, whereas the poney rarely lasts more than 12 or 14 years. As no asses or mules, however, are used in this district, we need not dwell any longer upon this or the 5th Section in the plan of the reprinted reports.

SECTION V.—HOGS.

CONSIDERABLE numbers of hogs are now reared in the Hebrides, where the ancient prejudice against pork has gradually vanished, since their more intimate connection with the Lowlands of Scotland and England. Still, however, they are not kept in such numbers on the northern islands as were to be wished, or as their merit, as live stock, cheaply obtained and easily fattened, deserves. In Gigha, Collonsay, Islay, Tyree, Mull, and especially in the little, but celebrated island of Icolm-kill, there are valuable stocks of them; but northward of Ardnamurchan Point, very few, and these few neglected and injudiciously managed.

1. *Breed and breeding.*—The Hebridian sow of Arran, Mull, and the unimproved isles seems to be either a lineal descendant of the Caledonian wild boar, or a

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cross

cross between him and the long domesticated sow of Ireland. It is tall, long, lank, bristly backed, difficult to support, and, in every point of view, an ineligible and worthless breed. It is voracious in the extreme, and excessively difficult to confine in pasture or to fatten: it is also destructive and mischievous, and therefore ought gradually to be extirpated. It is not astonishing that the common Highlander and Hebridian, judging from this breed, the only one of the *genus* with which he was acquainted, imbibed a violent prejudice against it, and extended that prejudice even to all who used it for food. A *sow-eater* was, among other epithets, a common term of reproach applied to a Lowlander or Irishman, and synonymous with a total want of delicacy and taste.

The Chinese and short-legged English breeds are however of late years generally introduced into the Southern Isles, and are found a very convenient and profitable kind of stock. They are fattened with bran, potatoes, milk, and some meal mixed with those ingredients, to the weight of from 8 to 15 stone, and cost less to bring them to a marketable state from a lean condition than any other eatable animal. The pigs are bought at 5s. or 6s. each, when 12 days old, and fetch from L. 2. to L. 2. 16s. when three years old. No miller, gardener, or brewer should want this stock; and indeed all farmers would soon find their account in keeping it. Contrary to common practice, in the Highlands and isles, and indeed in all Scotland, excepting on a few gentlemens farms, hogs ought to be kept very clean in point of lodging and of litter. When fattening for killing, they should get more milk and meal than usual, as this species of food communicates a superior

perior flavour to pork and bacon than any other. Cleanliness greatly promotes fattening as well as health, and is also favourable to fineness of meat.

The Hebrides might export nearly as many hogs as they do black cattle annually, and gain L. 30,000. or L. 40,000. by this sort of improvement; but they have hitherto done very little with this stock, although it is pretty certain that they were known in the Hebrides as early as the 5th century*. The Isle of Monk, or Muck, called in Gâlic, Eilean na Muchg, *i. e.* *Isle of Hogs*, and not, as some imagine, "*Isle of Whales*," which in Gâlic are always termed *muchga mara*, or *sea swine*, was occupied principally by this stock for the monks of Jona, and derived its name from that circumstance.

"The singular talent in swine, (says Dr Walker,) of digging and throwing up the earth, is a great nuisance in cultivated grounds. In wild tracts it may rather be advantageous than detrimental; yet, in general, it may be necessary to restrain them from the practice; to restrain them with rings in the snout is a difficult and painful operation. The rings are constantly giving way, and are troublesome to replace. There is another method, not generally known and practised, that is more effectual and less painful to the animal. In the snout of a hog there are two powerful muscles, which terminate in two strong tendons near the nose. It is only by means of these that the animal has so much power in digging and throwing up the earth; when the pig is about two or three months old, these

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* Vide Adomnanus. Vita St. Columbae.

two tendons may be cut by a slight incision with a sharp knife, about an inch and a half from the nose, with little pain and no prejudice to the animal : from thence he loses the power, and never shews any inclination to dig the earth. Even the wild boar, disabled in this way, has been kept for years in a park, where he fed only on herbage, along with the deer and the sheep, without ever overturning a handful of earth."—Hebr. vol. 2d, p. 174–5.

SECTION VI.—RABBITS.

EXCEPTING the small island of Cumbraybeg, in the Firth of Clyde, and a trifling farm in Arran, there are no rabbit warrens in the Hebrides. The former pays L.270 per annum as rent, and the latter L.95 for this stock. The rabbit, however, is found as a straggler on many of the Hebrides, and even in considerable numbers in the Long Island, though the remotest of the whole. Its flesh would be useful from the end of October till March, when he is in his prime, and when fresh provisions and fish are rather scarce in these districts, and his skin is highly valuable in the hat manufacture. The price of rabbit skins this season (1809–1810) is from 1s. to 1s. 8d. each. Many of the sandy islets, which abound near the larger Hebrides, might be converted

converted with advantage into rabbit-warrens, and that improvement will perhaps speedily take place; meanwhile, nothing occurs at present on this head to be communicated in a report of this kind, further than recommending the species of rabbit which is most advisable to be selected by such as intend to establish rabbit warrens on their farms or estates. The *silver-grey* rabbit is not only the largest of the species which we know in Britain, but carries also the most valuable fur. The hair of this animal is applied to a more valuable purpose, too, than the hat manufacture; it is dressed upon the skin as a fur, and is exported from England in this form to the northern countries, and even to China, with great profit. It is thus much more valuable than the common grey or black sort.

The ferret is indispensibly necessary in a warren. Without the assistance of this animal no considerable number of rabbits can be caught, nor can the proprietor be put in possession of his stock. A few ferrets, however, are sufficient for the purpose, and they are easily maintained and propagated, &c.—Vide Heber. vol. 2. p. 180.

SECTION VII.—POULTRY.

In a pastoral country without towns or cities, and with very few villages, and a scattered population, poultry
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can only be reared for private use and accommodation, not as an article of marketable profit. We find, accordingly, that the island of Bute, having the advantage of a considerable town, and of the vicinity of Glasgow and Greenock, rears more poultry for market than the rest of the Hebrides put together, although it contains only one-fifteenth part of their population. The common domestic poultry, however, as well as geese, turkies, guinea hens, and a few other species, the last kept by some gentlemen from curiosity, occur in the Hebrides, but neither in sufficient numbers, nor in any particular circumstances to merit notice in an agricultural report. The very same remark applies to pigeons and bees, which have not as yet been cultivated to any extent in this district. Goats still maintain their ground on several islands, and in certain circumstances constitute a valuable stock. Their flesh, when young, is by no means unpalatable or unwholesome; their milk is reckoned medicinal in various complaints, and their skins and hair are very valuable. On rugged precipitous lands, infested by foxes, and in which varieties of wild plants grow amidst the clefts of the rocks, goats thrive at no expence to the farmer, in a situation adapted for no other live stock. But wherever wood is to be reared, and inclosures guarded and preserved with attention, they must be banished; for being more a browsing than grazing animal, the goat will strain every nerve to crop twigs and plants of every description, and is a mortal enemy to every species of growing woods.

Excepting the ass, and perhaps the mule, it is not clear that this extensive region would gain by introducing

ducing any new sorts of domesticated animals ; indeed, the great want felt by the Hebrides is not that of animals, but of food in winter and spring for those which they possess. The native breeds of cows and horses are, (as already stated,) perhaps the very best possible for the country to support, and may, by due attention to feeding, and to selecting the strongest and handsomest pairs as breeders, be improved to an indefinite pitch of excellence. The breeds of sheep already recommended and described may be improved, and reared to five times their present numbers, without seriously injuring the agriculture or other interests of the country ; and a vast accession of wealth and of food might accrue from breeding a competent number of hogs, for which these isles, abounding in potatoes, are extremely well adapted. But all these improvements must go on progressively and slowly, and they must advance in the train of other agricultural and economical improvements to which it is our duty now to attend.

CHAP.

CHAPTER XV.

RURAL ECONOMY.

SECTION I.—LABOUR.

THE first thing which strikes a stranger who arrives in the Hebrides from England, or the Lowlands of Scotland, is perhaps, next to the sterile aspect of nature, and the bleakness of the soil's surface, the appearance of idleness and poverty exhibited by the inhabitants. He is apt to fret and become peevish; and probably wishes to see them all removed and replaced by a more industrious set of men. He does not take time to attend to the suggestions of candour, and to make allowances for their particular situation. He perhaps compares them with what the labourers or farmers of Yorkshire and East Lothian are in the beginning of the 19th century, rather than what the Hebridians themselves were fifty or sixty years ago, and what the former were
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in the 15th and 16th centuries, when they had nearly the same difficulties to encounter as the Hebridiens have in our times. Supposing the richest counties in Britain all at once divested of what has been done two ages back, their surface a rugged continuation of unclosed commons or downs, their roads mere foot-paths, scarcely practicable for any quadruped with the smallest burden; suppose them to have no canals, no carts or waggons, no means of direct communication, without two miles carriage costing half the value of the article carried, no markets, market towns, villages, cities, regular tradesmen, day-labourers, mechanics, or collections of materials assembled in any one place:—and in one word, suppose them to be in the situation of the Hebridian *tenant at will*, or cottager, and you will not much wonder at the present condition in which you find the latter, nor will you feel the same triumph for the Englishman or Lowlander from the effect of contrast. Labour can never be good or cheap where there is not a regular subdivision of it. The man who is compelled by his situation to attempt many employments, cannot excel in any one of them, but must lose much time in performing even defectively what habit and experience would have otherwise taught him to execute well. We accordingly find labour expensive, clumsy, and irregular, in the Hebrides; and if we attend for a moment to the condition of the natives, our wonder will rather arise from finding things not worse than from seeing them such as they are. It is, however, our business now to state facts rather than to reason upon this matter.

1. *Servants*.—These, whether male or female, are now hired by particular agreement between the parties, for a specified time and stipulated wages, much the same way as in other parts of Scotland. We found, however, as might be expected, a vast difference between the nature of the conditions in the southern and northern islands. In the former, servants are paid as high wages as in any part of the west of Scotland, amounting to L.15 or L.16 per annum for men, and L.4 or L.5 for women, besides various other perquisites, and their maintenance, which last amounts for the women to triple the sum of their nominal wages, and for men to nearly the same with their wages, *i. e.* a man-servant, able for carrying on farm-work of the ordinary kinds, costs his employer about L.30 per annum, and a woman-servant costs him about L.18 or L.20. In Lewis, the Long Island in general, and even in Skye and Mull, we may deduct *one-fourth* from this estimate; but these islands gradually follow the example of the others, which are nearer the great world, and will, in a few years hence, probably receive similar wages. This change is accelerated by the making of roads and bridges, by the gradual illumination of the natives, and by the practice now common among many of the younger labourers, of serving for a season or two, or at least for some months annually during five or six years, in the Lowlands or in the west of England, and then returning to their former homes with the money and the experience and knowledge which they have acquired. The common average over the whole Hebrides cannot, however, be fairly assumed at more than L.18 for men, and L.12 for women servants; because a great many are hired on

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on condition of getting leave of absence for a few weeks, or perhaps months in summer and autumn, for prosecuting the kelp manufacture, going to the fishery, or some other bye-business, unconnected with their regular annual engagement.

If the rise in the price of labour be an evidence of a country's advancement and prosperity, the Hebrides must have made rapid progress of late years. In 1780, men's wages in the Long Island, (where the greatest numbers of servants are kept in proportion to the rents paid,) were in money L.3 per annum, and women's L.1. 1s. besides the perquisites in kind and in dress, which they still receive, amounting altogether, maintenance included, to nearly L.12. for men, and L.8 for women. In 1810, they are, as above stated, (and even in the Long Island very nearly) L.18. for the former and L.12. for the latter.

2. *Labourers.*—One of the most serious inconveniences in the way of Hebridian improvements is the scarcity, and, in most cases, the absolute want, of day labourers. These cannot be procured at certain times for any money; nor can a farmer depend upon receiving any assistance in his operations during the busiest seasons of the year, excepting from his regularly hired servants. He is under the necessity therefore of keeping more of these than would otherwise be needful; and during bad weather, and in unfavourable seasons, they are not only useless, because not able to work out of doors, but also a heavy burden upon him in other respects. At such times he could procure labourers merely for their food, as also in seasons of extreme

treme scarcity ; but he cannot avail himself of the offer, for his meal and stock of provisions are already exhausted ; and even if he could feed them, their work would scarcely, in such times, pay for their maintenance. Such was the case in Skye, and on the opposite coast of Inverness and Ross-shire, in June and July 1808, during the cruel scarcity which then prevailed. It is not easy to point out any means, excepting the one formerly alluded to, for relieving the Hebrides from the distress occasioned by the want of day labourers. The population is so thinly scattered, and the means of subsistence so limited in the district, that regular and stated employment cannot always be procured ; and accordingly the young men run to canal and road-making in other districts ; and the young women go as maid-servants to Inverness, Greenock, and Glasgow, and thus deprive their own islands of their most active and most useful hands for a series of years. They generally return, indeed, to their own country and their friends ; but it is after earning some money, which puts them above absolute want, or the necessity of engaging as servants at inferior wages at home. They return merely on account of having a house and lodging *gratis* from their parents or relatives, or for shewing off their wealth, or perhaps endeavouring to get farms in the place of their nativity, to which the *amor patriæ*, inherent in all Highlanders, so powerfully prompts them. The one, and only means to which we now direct the attention of the readers of this report is, “ *The granting either of fens or of long leases, with building conditions, of small portions of land by the proprietors, to such persons as would chuse to take them, in situations favourable for the erection of villages.*” We are fully
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aware of the strong antipathy of Hebridian proprietors against this arrangement, and also of the plausibility of the arguments which they adduce in support of it; but facts are stronger than reasonings, and their evidence must carry weight on a point which essentially involves the prosperity of this country. The island of Islay is by far the best managed of the Great Hebrides; and in it alone have we found day-labourers regularly hired, and paid by the day, with houses, gardens, and a spot of ground which they could call their own. This occurs in the villages of Bowmore and Portnahaven, and is connected with the agricultural improvements and judicious operations carried on by Mr Campbell of Shawfield. That gentleman employs from 50 to 80 labourers constantly by the day, and pays them at the rate of 1s. 2d. or 1s. 4d. or sometimes more, according to the nature of their work and the price of provisions at the time. They are continually at his disposal, and are employed every day his overseer and they themselves think proper. They earn about L. 8. in money annually, besides cultivating their own little grounds, which they easily do at bye hours, with the assistance of their wives and children. They raise plenty of potatoes for their families; keep a cow, and perhaps a horse for work in the village; raise a little flax and hay; and are much more at ease than the small tenants in the other isles. Mr Macneill of Gigha, and Mr Macneill of Colonsay, keep a number of cottars, who are in fact day-labourers also, on very favourable terms, in a way somewhat similar. Their comparatively small islands do not indeed admit of granting feus, and would not afford room for the maintenance of villages; but they grant

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terms

terms which are equally favourable for the few cottars whom they employ. These are sure of employment, at considerable wages, every hour they chuse to work, whether at inclosures, drains, agricultural operations, or any other way that is agreeable to their master and to themselves. They are not compelled or urged to work, excepting merely by the inducement held out by their wages, which are punctually paid them on demand. They have a cow's grass, a spot of ground for potatoes, corn, and flax, sufficient to occupy their own leisure time, and that of their wives and children. Should the last mentioned be disposed to work also for their master, they may do so likewise, and indeed often work at pretty high wages, and thus double, or perhaps triple, the cottar's profits at the year's end. A woman can earn, at an average, (taking into amount the harvest months), about 10d. per day; and a girl or boy, of 12 or 14, 6d. These cottars have not only free houses and gardens, but also possess their lands at a very low rent, and, what is particularly valuable, *under leases*. It is obvious that this method can only succeed in few and particular situations, namely, where there is either a spirited proprietor or tacksman in the immediate vicinity, both able and willing to give the cottars regular employment at stated wages all the year round. Strange as it may sound in the ears of a Lowlander, this is not as yet the case in 20 places in all the Hebrides. And yet no country suffers so severely from the want of day-labourers, as we have already stated.

There are not many proprietors who can, with sober reflection, and due regard to the welfare of their estates and tenants, establish villages similar to those of Bow-

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more and Portmahaven*, or, consequently, plant, as it were, a *nursery of day labourers*, for the good of their proprietors and the accommodation of their tenants. Many requisites must be attended to, which are too often overlooked, and of which the neglect has proved the ruin of the villages which have already been attempted on several parts of the western coasts of Scotland. All these have united in recommending the scites fixed upon for his villages by the enlightened and judicious proprietor already named.—1. They are in the immediate vicinity of harbours, of fuel, of building materials, and of a considerable extent of populous country, in which day-labourers can always find regular employment near their own homes. This last is a *sine quâ non*, a circumstance indispensably necessary to the existence of such a village.—2. They are within easy reach of a competent quantity of improvable *waste land*, which they can procure at an easy rent, and gradually improve by their own and their family's efforts, without putting themselves to any great expence at once; and which yields them, even the first season or two, an immediate return for their time and labour.—They are within reach of good *fishing ground*, and of *regular communication* with the ports and cities of the kingdom.—4. They are at such a distance from each

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other,

* We do not mention Tobermorey and Stornoway here, because these were built and established with a view, not so much to the agriculture, as to the fisheries of the isles; and especially because they in fact are not at all cases in point.

other, that they may mutually assist, indeed, and promote their respective advantages, but cannot have any collision of interests, by the labourers of the one being tempted to outbid or to over-reach the labourers of the other.—5. They are so situated that the children can have access to education on reasonable terms.—6. They are at a convenient distance from the seat of the proprietor, so as neither to be nuisances in any respect, nor to interfere with his pleasure grounds or improvements; while at the same time their inhabitants are ready to attend his operations at the call of his overseers and deputies.

It is not our plan here to point out the various stations in which these requisites are combined on some great Hebridian estates. They will come in, in their proper place. But, without attention to them, day-labourers can never abound in the Western Isles, and without day-labourers many branches of their agriculture and rural economy must ever remain defective.

The rate of labour per day, it is not possible to fix, being so different in the various districts of this extensive region, and also at different seasons of the year, and in different circumstances of the inhabitants. It is seldom lower than 1s. 2d. however, or exceeds 3s. excepting during the herring fishing, and on other extraordinary occasions or emergencies.

A labourer can earn in the Long Island L. 4 by the kelp manufacture during the months of May, June, and July; he can earn L. 3 by reaping corn and mowing hay during August, September, and October; but his highest earnings are often derived from the fishery,
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and which sometimes amount to L. 40 or L. 50 per annum.

SECTION II.—PRICE OF PROVISIONS.

PROVISIONS are generally so high in price in the remote Hebrides, that were it not for the frugality and abstemiousness of the natives, they would consume much more than they earn, or than they raise from the land under its present management. The same quantum of English population, namely 91,000, would consume, at the moderate average of L. 8 each individual, L. 728,000 worth annually, or nearly seven times the rental of the Hebrides, and very probably *double* the produce of their soil.

The causes of this immense difference are obvious. The great body of the Hebridian population is contented with potatoes and a little milk and fish during nine months of the year, and rarely know what it is to taste meat of any kind. The Englishman must not only have meat regularly, but also beer, wheaten bread, and other articles, to which the common Hebridian is a perfect stranger. Hence the maintenance of 80,000 common people out of the 91,000 Hebridian population is, by competent judges, supposed not to exceed that of 25,000 Englishmen.

In a country so destitute of market towns, it is not easy to ascertain the price of provisions. The following may be very near the truth, at the average of the last 10 years, viz. The boll of oat-meal of 16 pecks or 160 lbs. averdupois, L. 1. 8s.—the boll of barley-meal L. 1. 4s.—that of potatoes 7s.—the stone of butter, of 24 lbs. 18s. 6d. or 19s.—the stone of cheese 6s.—a goose 3s.—duck 1s.—fowl 1s. 2d.—herrings 21s. per 1000,—ling and tusk fish L. 24 per ton,—and all imported luxuries or necessities, such as groceries, wines, spirits, medicines, &c. at least 15 per cent. dearer than they are in the larger towns and markets of the continent of Great Britain.

SECTION III.—FUEL.

It is often remarked, and with justice, that Providence supplies every country with the means of comfortable subsistence for man, if he is not wanting to himself, and if he turns to good account by his rational industry the blessings which are scattered around him. In no country is there so constant a demand for fuel as in the Hebrides, from one end of the year to the other. The climate is so boisterous and humid, that fires are continually used in every habitation, even in the middle of summer, and when the northern Swede

Swede and Russian suffer severely from excessive heat and drought. Without fire, every article of furniture, and especially such as have any iron, wool, or paper, in their composition, would soon be destroyed by the moisture; and although the cold is never excessive, or at all comparable with that of the continents of Europe, Asia, or America, in the same latitudes, yet such is the quality and penetrating nature of the Hebridian moisture, that perhaps triple the quantity of fuel is necessary there, which is used by persons of the same station with the native in the opposite regions of Europe. Fortunately for this district, nature has, in the absence of wood and coals, furnished such treasures of peat earth for fuel as can never be exhausted. The islands of Lewis and of North Uist contain 250 square miles of moss, of the best quality for fuel, and of a sufficient depth to afford at an average four feet perpendicular of peats over the whole surface, not only without exhausting or injuring the soil, but, on the contrary, doing it essential good.

But while it is allowed that the Hebrides in general contain fuel enough for the consumption of all Europe for many ages, it must be confessed at the same time, that particular islands and districts labour under the greatest hardships in procuring this necessary of life. The islands of Monk, Icolmkill, Tyree, and Cannay, which are very fertile and populous in proportion to their extent, exhaust one-third of their annual industry in procuring peats. Their utmost efforts are at times insufficient, and the distress to which the poor natives are exposed is undescribable. Horse and cow dung are burnt as fuel, and several other substances are used, of

which the smoke must prove very injurious to the comfort and the health of the people. On some of the large islands, and even in a few parts of those we have just mentioned as containing so enormous an extent of peat mosses, the same inconveniences are felt in several districts. The want of roads and bridges, and of the advantages of wheel carriages, which cannot be used on the present roads, is the principal cause; but mismanagement in cutting the bogs or mosses is also frequently the original source of the evil.

In North Uist, for instance, the tenants of Hougeary, Penmore, and Tigheàry, must now carry peats on their horses backs in small baskets or wicker-creels the distance of three English miles, (by such paths as they can pick out among mosses, rocks, and quagmires, and in which an English pointer dog would hardly escape swamping,) from the nearest practicable peat bog; whereas they formerly had only half that distance to go for them, and by a much better road. They cut their mosses without any plan or method; never attend to draining off the redundant waters either from the surface or from the subterranean springs; and thus ruin the best peat bogs, before they have removed one-tenth of their fuel or contents. This abuse is almost universal in the Hebrides, and highly deserves the attention of their landlords, and of the public in general.

Mr Campbell of Shawfield insists upon his tenants cutting their peats regularly, and making way for the superfluous water to escape. Mr Campbell of Ballinaboy is also exemplary in this respect, as may be seen by inspecting his well managed peat moss about half a mile to the southward of his house.

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This plan is simple, and at the same time improves instead of injuring the ground. He cuts to a certain uniform depth in parallel lines, and has a conveyance for the water communicating with the lower extremity of each cut, for the purpose of draining completely the bed of the moss from which the peats are cut. The top or tufted sward, which covered the surface of the moss to the depth of six or eight inches, is then cast into the place whence the peats are taken, and levelled down regularly, so as to form an even uniform surface, which, on account of having less wet moss below it than before, becomes much more solid and steady than it was previously to the operation of casting the peats, and becomes fit for bearing grass or corn much sooner than it would otherwise do, in consequence of the improvement in question. This is indeed a method of reclaiming peat moss without any expence, and at the same time of economizing the precious supply of fuel yielded by the ground. Wheresoever a peat moss is poached and broken up irregularly, the stagnant waters destroy the quality of the moss, and effectually bar all access to it by beasts of burden.

The quantity of coals used in the Hebrides is, comparatively speaking, very trifling, being confined entirely to the consumpt of two or three villages, and the burgh of Rothesay in Bute, and to the families of a few gentlemen in the nearer isles. The waste of labour makes the *winning* as it is called, or the securing and laying in of peats, very expensive, and inconceivably teasing and troublesome; but the quantity of fuel requisite for an Hebridian family is so great, that very few indeed can afford the expence of coals, and therefore

fore they struggle through the difficulty and drudgery of peats the best way they can. Several gentlemen farmers have declared to us that they would willingly pay one third more rent for their lands on condition of being supplied with peats by their landlord : so that a farm of L.300 per annum spends L.100 in procuring fuel. At this rate, the expence of fuel is in the Hebrides to what it is on the Scottish and English coasts, at an average (*south of the Tay and Clyde,*) at least as five to one. In this proportion, however, we must not include the inland Scottish counties of Setkirk, Peebles, Roxburgh, or the Highland districts of Berwickshire and Lanark, &c. in which fuel, on account of the long carriage and want of canals, is dearer than in any part of Europe.

It is rather a bold and hazardous attempt to point out a remedy for evils which have for ages been acknowledged and severely felt by a sensible people, without their applying any cure to them. Such attempts are frequently imputed to presumption and ignorance. The evils, however, are so serious, that any directions which may ultimately tend to induce those persons who have it in their power to alleviate them to exert their influence for that purpose, are surely at least innocent if not laudable and beneficial. Analogy too, and the experience of men similarly situated in other countries, ought not to be entirely overlooked. The scarcity of fuel has been long severely felt in the Danish provinces of Jutland, and the isles, and also in the north-western districts of Germany and Holland. The peasants of those countries, stimulated first probably by necessity, and now prompted by the love of gain

gain and the rewards of a lucrative branch of industry, have been for centuries in the practice of *manufacturing peats* and exporting them in barges and vessels of different sizes to distances of several hundred miles. Their peats are of very inferior quality, because their mosses are not of so ancient formation; nor their ingredients so completely amalgamated, decomposed, or consolidated by time, as those of the Hebrides. The people are therefore under the necessity of baking them, and of bestowing six times the labour requisite in our country. Still, however, they find it for their advantage to continue this tedious and laborious manufacture; and they can afford to sell their peats at 100 miles distance from the peat mosses at a *guinea a ton*, and this they can do notwithstanding the want of good harbours, and the difficulty of shipping and unshipping them on their shallow coasts.

On conversing upon this important subject with Captain Cameron of Lochmaddy, Lord Macdonald's chamberlain in North Uist, we found that after the novelty of the comparison between the state of the Hebrides and of the Danish isles and Westphalian and Dutch coasts had subsided, he had the same opinion with ourselves. Peats might be cast and dried by persons who should dedicate their whole attention to them during summer and the first month of autumn, in many parts of the Hebrides, and exported to the adjacent isles and districts, with very great advantage to both parties.

Supposing, for example, that 10 men and 10 women and boys were to fix upon Lochmaddy, just mentioned, as the scene of their operations, and to commence the
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casting and winning of peats early in May; they could easily cast every working day in May, June, and July, such a quantity of peats each man, as would, when dried, weigh four tons: indeed, one man has been known to cast seven tons in six hour's time. Let the man work alternately at the peat spade, and peat fork, which throws the peats upon firm ground, while the women and boys are occupied in good weather, (rarely interrupted in those months in the island alluded to,) in raising the peats on end, in stacking them on the sea-beach, &c. and in otherwise preparing them for being shipped without delay when fully dried, and let us suppose the price on shipping to be as low as four shillings per ton, *i. e.* rather less than *one fifth* of the price of much inferior peats in Holland and Denmark, and about one sixth of what they *in fact* cost at present in the Hebrides. The account pro and con will stand at a moderate computation as follows:

Working

Working Days. Tons made. Value at 4s. Value to Consumer at 15s.

In May, 20	— 800	— L. 160			L. 600
In June, 22	— 880	— 176			660
In July, 18	— 720	— 144			540
	— — —	— — —			—
Total 60	— 2400	— L. 480			L. 1800
Deduct 20 days labour and wages in August, for shipping and disposing of the peats	40			Deduct freight, at 4s. per ton,	480
Item, 60 days wages, at 2s. each, of 20 persons	- - 120			Risk, &c.	100
Item, Tools, and other incidents	40				—
	— — —			Prime cost	L. 580
Total expenses		L. 200			480
				Total expense	L. 1060 to consumer.

Clear Profit L. 280 or L. 14. to each person of the labourers. L. 740 clear profit to consumer.

It is to be observed that the original material costs nothing; but that liberty to dry and prepare the peats may perhaps be coupled with some trifling services to be performed to the landlord or proprietor; but that indulgence may easily be repaid five-fold by the labour of the peat makers during the bye days, on which we suppose them not to be engaged in their labour out of doors, viz. seven days in May, four in June, and nine days (exclusively of Sundays) in July. These 20 days we do not take into account in the credit side of this calculation, while at the same time very high wages are allowed the labourers, and very moderate prices are fixed upon the peats both to the exporter and the consumer.

It is natural to ask why, in a case of this kind, should a whole nation, like the Highlanders and Hebridians, remain insensible of the obvious relief thus presented for their most grievous local inconvenience? Why are there no peat-casters or peat-makers by profession in North Uist and Lewis, where the finest mosses in the world are met with in inexhaustible quantities, lying upon the very beach of some of the best harbours in Europe; and where boats of all descriptions, and intelligent and active sailors abound? We might easily answer these questions; but we leave them to those who are most interested in removing the reproach which they imply. The place where we suppose this manufacture to commence is peculiarly well calculated for it, being a well frequented harbour in the centre of the Long Island, within three hours sailing of Skye, and within 24 hours sailing of all the Hebrides excepting Bute and Arran.

CHAPTER

CHAPTER XVI.

POLITICAL ECONOMY.

Circumstances dependent on Legislative Authority.

UNTIL of late years the British Government was known only by name in the Western Isles. Its pressure was indeed occasionally felt by the natives, who were dragged to fight the battles of the empire in the army and navy; but none of its benefits or privileges extended to their neglected wastes. No roads or bridges were made;—no post offices, packet boats, or other channels of communication existed;—no bounties or rewards of any description were held out to industry, enterprise, or invention;—there was no police, no order, no motive to exertion, and no stigma for irregularity and confusion. With all these disadvantages, the people were, upon the whole, a more respectable tribe than many others which enjoyed superior advantages.

tages. The patriarchal manners and affections of their chiefs maintained a considerable share of social happiness among them; and if they could not justly be said to stand high in the lists of polished, commercial, and industrious *nations*, they were at least not inferior to the general run of their countrymen in excellence of individual character. Their local disadvantages, however, and the dispersed and unconnected straggling position of their population, rendered abortive the attempts at improvements which were from time to time made by public spirited men among them. At last Government perceived the importance of this district, and has of late years bestowed some share of attention upon it. Roads, bridges, packet-boats, and post offices are erected and established in various places; and although not yet by any means so extensively useful as were to be wished, or as they shall very probably be in some years hence, they have effected very salutary changes upon the condition of the inhabitants. Much remains, indeed, still to be done, and Government will do well to continue its fostering care towards this interesting part of the kingdom. The legislature has been seconded in its exertions by the co-operation of the Highland Society, which has unquestionably done considerable good to the Hebrides as well as to the rest of Scotland; and it is to be hoped that, in the course of time, the local impediments to the improvement of that extensive region, shall be in some degree removed by the amelioration and more general enforcement of such salutary measures as have already been adopted.

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It is perhaps to be regretted that the Hebrides do not possess one iota of *efficient political power*, having no representation in parliament further than the counties to which they are attached would have although *they* were sunk in the Atlantic. Excepting the town of Rothesay in Bute, they have no royal burgh; and their valuation is so low, that their weight in their respective counties, in returning members to Parliament, is almost absolutely null. The valued rent of the parish of St Andrews, in Fife, is greater than that of Skye, Rùm, and the Long Island, which are in extent to it as 150 to 1, and in value as 15 to 1!!

In consequence of this insignificance in a political point of view, and of being perhaps overlooked in framing most of such Parliamentary bills as regulate the Excise laws and the regulations of our fisheries, the Hebrides have great cause to complain of the hardships to which they are exposed. The difficulty of procuring salt, excepting for the express purpose of curing fish, and the round-about and tedious mode of getting it even for that purpose, are constant sources of irritation and disgust. The humidity of the climate renders it a very difficult matter to preserve salt from melting; and, therefore, every man who lays up a stock of it, and becomes bound for the specific application of every bushel of that stock to fish-curing, and to that process only, incurs not only a certain loss, but also a heavy penalty. The result is, that few salt stocks are found in the Hebrides, and many thousand barrels of the finest herrings in the world are lost every week during the fishing season for want of salt. We have seen whole cargoes thrown into the sea in a putrid

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state, and others used as manure for potatoe ground, in consequence of the inability of the fishermen to find surety or bail for the requisite supply of salt conformably to the salt-law regulations. This has long been bitterly complained of, and yet has met with no attention. It is often supposed to involve some intricate and difficult problem in economics; whereas the Hebridian thinks nothing under the sun clearer than its remedy. "Give us the salt (says he) at a moderate duty for every purpose of life, in such quantities as we please, and give us a bounty upon the fish when it is brought by us to market and shewn you cured according to your own regulations." He has no patience to listen to the objections urged by men from other parts of the empire against this plan, on the ground that the Hebridian would in that case smuggle his salt to the east of Scotland and to England, to the great detriment of the revenue, and the serious loss of the fair dealer in those countries. He answers, that smuggling of salt would easily be prevented like that of foreign spirits and foreign contraband goods, without adding a single wherry or a single mariner to our present revenue vessels.

Intimately connected with the grievance in question, is another complaint against the legislature, respecting the late enactments in the herring fishery. Three-fourths of the herrings caught in the Hebrides are caught by the common people and by gentlemen's tenants and servants in their own boats, and with their own nets, in the vicinity of their usual places of residence, at very little expence, and with (comparatively speaking) very little risk or trouble. These men can never

never afford the capital nor the time required by the new laws for the deep sea-fishing; and they regard the whole provisions of those laws as an ungenerous insult, in holding out to view bounties and rewards which the framers of the law must have known would be entirely beyond their reach, and serve no other end than to provoke and tantalise them.

In a report of this kind, such things may perhaps appear to be misplaced; but the prosperity of the Hebrides is so intimately connected with their fisheries, as well as with their agriculture, and these two are so closely and intimately blended together, that whatever affects the one must also influence the other. The Hebridian's agricultural occupations can very easily admit of the casual and short interruptions given to them by fishing in his immediate neighbourhood; but they are by no means consistent with a voyage to Brassy sound, and an absence from his house and lands for three or four months. There are as yet scarcely any professional fishermen in the Hebrides, in the strict sense of the word. The fishing is carried on by persons who have some landed possessions, and whose families have accordingly a stated place of abode, and a kind of security for their maintenance, even when the fishery fails. It will be a considerable time before this system can admit of a total change, and before the Hebridian fisher can separate himself and his family completely from agricultural pursuits, or devote his whole time and labour, like the fishermen of the more populous parts of England and Scotland, to the employment of fishing exclusively. He has no capital to enter upon such speculations, or to procure the requisite appa-

ratus, and far less to maintain his family during his own absence from home. There is no market for his newly caught fish in winter, and which he has neither the means of curing nor of storing for a more convenient season for exportation. In short, it is impossible for the poor man to attempt any thing further than merely engaging for a few days or weeks at a time in his neighbourhood, when he receives intelligence of herrings and other fish being plentiful on the coasts, or perhaps of joining occasionally in the white fishing within a convenient distance from his home, and conjoining with both operations the profession of a labourer or farmer. The description of persons included in this class is very numerous in the Hebrides; and they unquestionably deserve consideration in all the arrangements formed or encouraged by our legislature for the improvement of this part of the Empire. They amount to from 10 to 12,000 families, and might prove, by proper management, extensively useful to their country, instead of being (as many of them are at present) a dead weight upon the landed proprietors, who are obliged to give them small portions of land at a trifling rent for the support of their families.

Besides the salt and fishery laws, there are many other circumstances dependant on legislative authority, which might greatly promote the improvement of those islands. It is needless to specify the whole of them, but a few may here be named: The prompt and inexpensive administration of justice cannot be secured without prisons and proper officers being established, at least in all the larger islands. This is by no means at present the case; and disorderly persons are frequently permitted

permitted for years to be nuisances in the country, on account of the trouble and expence that would attend the removing of them. Supposing a person commits theft or any other trespass in Bar-ray or any of its islets, is it likely that he shall be sent to Inverness, the county town, to be there tried and punished, in consequence of the deposition of witnesses against him, who have a journey of 150 miles, and a voyage of 40 or 50, to make in order to appear at his trial, and who must be absent from home at least a month or five weeks for that purpose. The expence of sending a culprit, guarded by two men, and accompanied by two witnesses from Bar-ray to Inverness or Inverary, will amount, in ferries and all other incidental charges, to very nearly *eighty pounds Sterling*. Taking the population of the Long Islands and the adjoining islets, all liable to the same inconvenience, at 25,000 souls, and supposing that the natives are among the most harmless people in Britain, yet one out of 500 may be supposed to incur either the necessity of an enquiry or of a legal penalty each year; but can it be supposed that the landlords, or other persons connected with that district, will not rather endure great inconveniences, than lay out eighty pounds for each of fifty prisoners *annually*, or L.4000 for the regular and effective administration of justice? It is not here meant to insinuate, either that the Long Island needs any extraordinary measures to be adopted for the purposes of justice, more than any other part of the country, or that these purposes are difficult of attainment, at an expence incomparably smaller than L.4000 per annum, even in their present state; but the fact is, that unless we suppose the natives perfect angels, and total-

ly divested of human frailty and corruption, it is impossible that irregularities can be avoided, or promptly punished, without some additional measures of precaution and of subsidiary policy being adopted. There ought to be four prisons, and at least 40 constables, (we mean *real active* constables, fit for their duty, and not gentlemen, whose humanity and misplaced tenderness for their countrymen are often very detrimental to the best interests of the latter themselves,) in the Long Island, and a proportionable number in the other Hebrides. The suitable situations any man acquainted with their local circumstances may easily point out.

The want of direct and regular communication by packet-boats, is a great grievance to some of the isles. This is so well known, and so severely felt, that applications are annually made to government, by different Hebridian proprietors, for remedying the evil, but almost always without success. We shall only state one instance of the gross neglect of this important branch of national accommodation, and which a glance at the map will explain to every man's conviction. On Mr Macdonald of Clanranald's estate in Moidart or Arisaig, on the main land of Inverness-shire, there are some excellent harbours and stations, whence a packet for the southern parts of Skye, and the Long Island, as well as Rum, Eigg, and Canisay, might regularly sail, with passengers and letters, &c. There is a carriage-road from Edinburgh by Fort-William, direct to the sea ports of Arisaig, made at a heavy expense to the country and to the estate of Clanranald. Now, supposing Mr Macdonald wishes to write a letter from Arisaig, (where a packet boat should certainly be established,)

ed,) to communicate with South Uist, another part of his estate, and to which the passage from Arisaig is five or six hours' sailing; What course and what time must he take? why, he returns by Foras William in an easterly course 200 miles to Edinburgh, goes north by east to Aberdeen 120 miles, thence west and by north to Inverness, along the coast of the Murray Firth, visiting all the towns of that populous region in its progress, and travelling six miles an hour for 132 miles; thence by a bad road, in a goat skin wallet, on a post-boy's back, at the rate of three miles an hour, for 200 miles, in a west and south-west direction to Dunvegan in Syke; thence, if the wind and weather prove favourable, to Lochmaddy in North Uist, 24 miles in a north west course; and from Lochmaddy, when the tide answers, by a very precarious road, 40 miles in a south-westerly direction, to Loch Boisdale in South Uist. This Loch Boisdale is opposite to Arisaig, the place of the letter's date, and about 58 or 60 miles distant. The unfortunate epistle or parcel, or whatever it is that must be sent in the line of the post office from Arisaig to Loch Boisdale, has sailed or travelled through all the 32 points of the compass repeatedly for a fortnight, or perhaps in winter a month or six weeks, the space of 722 miles, and the answer has the same fatigues to undergo, while the writer must wait for it at Arisaig. Instead, therefore, of an answer in 24 hours or less, and by a voyage of about 120 miles in an open and safe sea, the post office arrangement gives it in 2 or 3 months, after a journey of 1444 miles, of which 200 are very troublesome and dangerous fords and ferries.

The distillery regulations we shall not here touch upon, further than merely to state that they cannot be more pernicious than they are at present to the Hebrides. A strong temptation is held out to smuggling and illicit distillation; fines, ruinous to the poor natives, are exacted, and their morals and industry greatly injured, while at the same time the agriculture of the country, and the improvement of the revenue, are kept back. Various other circumstances of a similar description, and which more properly come under the denomination of *agricultural disadvantages*, might here be enumerated; but the above are sufficient to turn the attention of every friend of his country to this neglected district; and it is to be hoped that, through the recommendation of the Board of Agriculture, the hints thrown out may be attended with beneficial consequences.

SECTION I.—ROADS.

THE islands of Gigha and Islay have as good roads as most highland districts; and some other islands, especially Colonsay, Lismore, Jura, Mull, and Skye, are following their example. It will be long, however, before the Hebrides can afford to make one fourth of the quantity of roads which they require. The Long Island had only two pieces of carriage road finished in summer 1809, *i. e.* 15 miles, from Stornoway to Bar-

was in Lewis, and seven or eight miles made by Lord Macdonald in North Uist. Both were made at the expence of the proprietors, the last mentioned nobleman, and Lord Seaforth, and without any aid from government. Nothing particular can be said either of the materials or the mode of forming and filling up the Hebridian roads. Where gravel can be easily procured, it is used freely, and where mosses occur, they are either removed until the workmen reach a solid substratum, or if too deep for that process, a foot or 14 inches of stones and gravel are laid over the surface, allowed to consolidate, and then a coating or surface of two or three inches of finer gravel covers the whole. Many complaints are heard of the partiality and mismanagement which are exhibited in applying the aid granted by government for making roads and bridges in the Hebrides, and such may undoubtedly occur in the outlay of all public money on various occasions, but we found nothing particular worthy of animadversion on this head, and the most fatal obstacle to the great improvement of the country by road-making, (which must naturally lead the van of all other improvements,) arises either from the apathy of the great body of the natives, or from the little private jealousies and animosities of persons of influence among them, which too frequently prevent the steadiness of concert, the vigour of exertion, and the regularity of plan and system, which are necessary for prosecuting so arduous a task in these islands.

There are no iron *rail-ways* nor *canals* in the Hebrides. The Crinan Canal, finished eight or nine years ago, and which affords a safe and speedy access from the Southern Isles to the Firth of Clyde and the centre

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of Scotland, is a most useful work, and contributes greatly to the improvement of those districts. It was opened in July 1801. In February 1805, in consequence of heavy rains and a long tract of boisterous weather, the sides of the canal gave way in some places, and it was not till July 1806 that it was again navigable. By the aid of government, a substantial pier has been since built at the east end of it, for the purpose of facilitating the entrance and egress of vessels at all times of the tide, and in every sort of weather. Since the opening in 1806, there has been no interruption to the trade of the canal, a circumstance very remarkable in so high a northern latitude; and considerable reservoirs have been made for a further supply of water in consequence of a greater resort of shipping. Between 800 and 1000 vessels of all descriptions pass and repass annually. Of these perhaps 200 are small boats engaged in the cod and ling fishing, which carry their cargoes to Greenock and Glasgow, and return to the Hebrides with such articles as they need. Their crews were for ages in the practice of dragging them, by strength of mens arms, across the isthmus of Kintyre from West to East Loth-Tarbert, and of losing many of them by the wear and tear undergone in that troublesome operation. It was by the same road that the great insular chief, Macdonald of the Isles, had his barge drawn from sea to sea under full sail, and thus constituted Kintyre *an island*, and annexed it, under that title, to his extensive territory. The Scottish Prince of the time was not in a situation to resent this insult, or to recover the plundered district, so that Macdonald enjoyed the revenues of it till the latter end of the seventeenth century. Nearly

by 250 registered vessels, from 16 to 80 tons burden, pass annually through the canal to the herring fishing; the remainder are packet boats, small craft which carry slates, bark, lime, coals, &c. The expense of this canal has been £. 140,000; its extreme length nine English miles; its depth 12 feet; breadth sufficient to admit vessels of 160 tons; and the toll for loaded vessels 1s. 6d. per ton, and for vessels in ballast 9d.

To understand the value of this canal, it is necessary to recollect that Argyleshire is deeply indented by arms of the sea, or rather consists in a great measure, of a succession of peninsulae and tracts. The promontory called Mull of Kintyre, the southern extremity of Argyleshire, stretches out into the Atlantic Ocean to a great distance from the rest of the county, and almost into the latitude of the mouth of Ireland. A vessel from any of the West Highland or Hebridian ports bound to Clyde, which is the great mart for the disposal of their produce, and for supplying them with articles of merchandize in return, was formerly obliged to go entirely round by the Mull of Kintyre, and thus add nearly 300 miles to the length of her voyage, as it is at present abridged by this canal. When we consider the numerous dangers, delays, and inconveniences which attended the circuitous navigation round the boisterous Mull, the dread and detestation of mariners, the importance of the Crinan canal will be very obvious; and it will certainly be matter of deep regret, if the embarrassments which menace its funds shall become so serious as to interrupt or suspend the accommodation which it affords. This evil we heard whispered as probable; but it is to

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be hoped that a liberal and enlightened government will ward it off.

The Caledonian canal, now prosecuted with much spirit, and which is to connect the great arm of the Western Sea, called *Linné-Heeloch*, with the Murray Firth and the east of Scotland, will, in process of time, prove highly useful to the Western Isles. It is 20 feet deep, 50 feet wide at bottom, and 110 wide at top. The locks are 20 feet deep, 170 feet long, and 40 feet broad. Frigates of 32 guns, and merchant ships of 1000 tons burden will be able to pass through it. The number of men constantly employed upon it since its commencement in 1803, is from 800 to 900. The work is in great forwardness; and we may, in five or six years hence, enjoy the singular spectacle of seeing a man of war sail by the Highland road from Inverness to Fort-William, surrounded by terrific mountains towering to the clouds, and thence conveying the British thunder from the inmost recesses of Ossianic and Fin-galian solitude to the shores of America and her thousand tribes. The expence of this canal will probably amount to L.800,000. Sterling, and yields a pleasing instance of the liberality of our Legislature towards these sequestrated districts.

Although these two canals belong more properly to an account of the continental than the insular parts of the counties of Argyle and Inverness, to which they respectively belong, we have ventured this short description of them, because the Hebrides are intimately concerned, and deeply interested in their prosperity, and because one of them has been finished, and the other carried on to a considerable length, since the agricultural reports of the counties alluded to were printed.

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SECTION II.—FAIRS.

EXCEPTING in Rothesay in Bute, there are no regular fairs in the Hebrides. The only kinds of fairs known are those of cattle, sheep, and horses; and they have nothing particular connected with them to deserve any special remarks. The same may be said of the country *markets*, which are occasionally held on the days fixed by persons of influence on the different isles, and advertised, either by a notification inserted in the newspapers, in order to bring dealers and drovers from a distance, or merely proclaimed from the churches of the different parishes of the country.

SECTION III.—WEIGHTS AND MEASURES.

THESE are a perfect plague to every man who wishes to obtain accurate information concerning the Western Islands. They vary in almost every parish, and are a perpetual source of misunderstanding and irritation. The legislature might surely enforce an uniformity of weights

weights and measures, be these what they may, whether English, Irish, or Scottish; and, by proper penalties, strictly levied, compel the population of the empire to adopt a regulation which would soon be felt and acknowledged as an universal blessing. It is idle to talk of the difficulty of fixing upon an unit, whether of liquid or solid contents: the units of both, which we actually possess, are sufficiently accurate for every useful purpose; and we might certainly adopt them universally without much trouble or expence.

So much, however, has been written upon this subject of late in many of the agricultural reports, that we shall not here add any thing further than that every man of influence in the united kingdom ought to second the efforts of the Board of Agriculture in procuring that uniformity in weights and measures, which is so much and so long talked of, but without which neither trade, barter, nor agriculture, can ever arrive at that degree of prosperity which such uniformity would certainly produce.

1. *Land*.—The common measure for land in such of the Hebrides as pay any attention to measurement, is the *Scotch acre*, of which 500 make a statute *English* mile, and which comprehends 6150 English yards, or 55,350 feet square of superficies. It is to the English statute acre as 640 to 500, or nearly *one-fourth* more in contents.

2. *Corn*.—Corn is sold by measure, never by weight, excepting in the case of imported meal. Bush-balls and pecks vary in the different isles, and that sometimes

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to a considerable extent. On passing the ford of Cairnish from North Uist to the southern division of the island, the peck is nearly one-eighth less, but the boll contains 20 instead of 16 pecks, as in North Uist. The same confusion prevails in almost every district of this extensive region; and a man requires years of residence before he obtains any considerable facility in reducing the weights and measures of one island into those of another. On some islands, indeed, we found the weights differing materially in the different families, there being no tangible standard by which they are rectified; and being often manufactured by careless artisans, whose only care and study it is to please the persons who employ them. It is therefore useless to dwell any longer upon this part of Hebridian economy.

SECT. IV.—PRICE OF PRODUCTS COMPARED WITH
EXPENCES.

THE quantity and quality of such articles as are produced by Hebridian labour, render them very expensive in reality, although not at first sight evidently so. The desultoriness and irregularity of labour in general, and the want of that subdivision without which arts and trade cannot prosper, are the cause. The Hebridian

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is as able, and often as willing to work as any man, in things to which he is accustomed. He is an excellent sailor, fisherman, ploughman, and manufacturer, when met with in other parts of the world, but too often displays very few symptoms of such dispositions at home. The want of plan and method, inattention to giving each man his own share of labour, and of that sort to which he has the greatest aptitude (unquestionably the real sources of the evil) are not believed by many strangers to be sufficient to account for what they term an innate and incurable *tendency to idleness* in this people. But surely the Hebridian does not change his nature when he leaves his native island; he does not become all at once a different being, active, rational, regular, and industrious, instead of a creature of diametrically opposite properties. He only changes his habits in consequence of the advantages derived from a proper subdivision of employments and of labour; and were such application of his powers possible at home, he would display the same valuable qualities in Skye, Mull, and the Long Island, as he does in the lowlands of Scotland, and in England, where he equals any labourer in the world. A good labourer can earn 2s. per day in the larger isles, and maintain on the common fare of the country, viz. potatoes, herrings, some milk and a little meal, a family of 5 persons by his wages. The isles, however, differ so materially from one another in the prices of products, compared with expenses, that no general average can be fixed upon. Islay is as much superior to Lewis in this respect, excepting the village of Stornoway alone, as Lewis is to the most backward tribe of American Indians.

SECTION V.—MANUFACTURES.

No equal portion of European population, not even excepting the Russians and most uncivilized Poles and Croatians, possesses so few manufactures as the people of the western islands of Scotland. This is, among other causes frequently adverted to in the course of this report, a principle source of the poverty and depression of the people. It makes the little money acquired by the fisheries and drawn in exchange for black cattle, and the other productions of the district, continually flow out of it, and prevents that gradual advancement in wealth, comfort, and agricultural and economical improvements, which are conspicuous in all other parts of Scotland; and although it does not absolutely keep these isles in a quiescent state, it greatly retards their progress.

The introduction of manufactures into any country is a most delicate and arduous affair. The first attempts prove frequently unsuccessful and sometimes ruinous to the parties concerned; and they are so too often, in proportion to the ardour and spirit with which they are commenced. Such was the fate of most of the large establishments of Frederick the Great in Prussia, and of many of those of Joseph II. in Austria, Hungary, and Bohemia,—and, to compare small things with great, such has been the result of almost all the manufacturing speculations ever tried in the Hebrides.

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Several preliminary accommodations are absolutely requisite to ensure the success of any manufacture. The necessities of life, fuel, lodging, and the materials of clothing, must be abundant and procurable at a moderate price, and in some proportion to the reasonable labour of the manufacturer. The raw materials for the manufacture in question must be plentiful, and of easy and commodious access. Communication with the great body of the nation, and with all its markets, must not only be open, but regular, and cheap.—There must be no disheartening restrictions by tolls, roads, ferries, or any other means of hampering the vigour and industry of the manufacturer.—The manufactures carried on ought to be such as will always find a ready sale and constant demand either in the vicinity or within easy reach of it.—The manufacture should be such as to give employment to women and children in some of its collateral branches, and to occupy as much as possible of the raw produce of the district, and of such materials as the people can raise or procure for themselves, without obliging them to pay high prices for such materials in money at the beginning.—The machinery, tools, and contingent expences must be made as easy as possible, and the means of amending and repairing them must be always at hand.—The manufacture must be suitable to the soil and climate, and other physical properties of the local situation in which it is to be prosecuted.—Every exertion should be made by the landlord or proprietor of the ground, for attaching manufacturers to the spot, by giving them as favourable terms of feus, leases, &c. for their houses, as will induce them to build their dwellings in a substantial and comfortable

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comfortable way, and give them a home of which they shall be proud, and which they cannot leave without the chance of incurring some loss. The terms, however, of transmitting or exchanging such property or accommodation, must on no account be intricate or doubtful; but, on the contrary, plain, simple, and easy in the extreme, so that the possessors may feel themselves at liberty, and rejoice in that feeling. This is a matter of *primary* importance, and inattention to it was the great cause of failure in most of the Prussian and Austrian manufactures. Now, it is peculiarly hard in the case under consideration, that the want of *any one* of those *numerous* requisites, will most probably involve the ruin of any Hebridean manufacturer whatsoever; but it must also, at the same time, be confessed, that they meet in regard to a few species of manufacture, which we think ought to be encouraged in this district; and which will not, in all probability, be accompanied by the dangers to which we have already alluded.

The linen manufacture possesses, in an eminent degree, the advantages now enumerated. The soil and climate are well adapted to the flax husbandry: water abounds in every situation;—there are more women than men in the country—more than perhaps occurs in the proportions of the sexes any where else in Europe, owing to various causes, sufficiently obvious; the labour of women and children, and their maintenance are cheap; the tools and implements requisite are simple and easily repaired; there is a constant demand for the article manufactured, and ready payment, as well as easy carriage to market, &c. In short, every

consideration urges the Hebridian proprietor to encourage this manufacture on his property. Nor is the success of it a matter only of conjecture. The best farmers in the Hebrides have, for some years past, introduced it upon their estates. The island of Islay clears from L.6000. to L.7000. annually by it, and Collonsay, and the more improved of the neighbouring islands, carry it on with considerable spirit.—Some friends of the Western Islands have recommended the woollen manufacture of late years, because, in consequence of the recent introduction of the larger breeds of sheep in greater numbers than was formerly known in those districts, the raw materials are cheap and abundant. That similar woollen goods to what are made in Shetland and the highlands of Aberdeenshire, might be carried on with success in the Isles, is very probable; and also perhaps, by degrees, some species of a more extensive manufacture: but it is very doubtful whether, in their present situation, the Hebrides ought to attempt this manufacture upon a large scale. Whoever has seen the machinery used for it in Yorkshire, Wiltshire, Gloucestershire, or even at Hawick, Gallashiels, and Stirling, and calculates the expense of the first establishment, must perceive the impracticability of similar attempts in the Hebrides. If any where, however, this manufacture might be tried in the village of Tobermory. Labourers could be procured at moderate wages;—there is abundance of water; and the place is in the neighbourhood of large and flourishing sheep-farms.

Kelp is a well known Hebridian manufacture, and yet still susceptible of great improvement, both with
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regard to the quantity and the quality of the article sent to market. It is, however, in an advancing state; and some large properties, (for instance Lewis,) have manufactured in 1809 nearly double the quantity, and that too of superior quality, of what they ever did before in one season. Mr Macdonald of Staffa is distinguished for his active attentions to this branch of Hebridian economy; and has accordingly procured for his kelp a character which enables him to dispose of it at a higher price than the average of the Hebrides obtains. This results principally from its being begun early in summer, its being duly attended to in the carriage and drying of the sea-weeds, and especially its being kept clean and unmixed with clay, sand, stones, and all other impurities, which greatly diminish the value of kelp on many Hebridian estates. The average quantity of kelp made in the Hebrides for the last 10 years, is from 5000 to 5,500 tons; and the number of persons employed in it amounted to nearly 8,800. The price has been sometimes as high as *twenty guineas* a ton; but, upon the whole, L.16. is a fair average. The money made by the district by this manufacture, therefore, has amounted to from L.80,000, to L.88,000. per annum; from which very little is to be deducted for expences, further than the very simple iron tools used for cutting and burning the weeds, the wear and tear of horses, and the occasional supply of meal afforded the manufacturers by the proprietors of the ground. Upon a reasonable calculation, the expence attending a ton of Kelp may be estimated at L. 5.; so that if it sells above that sum *in the country*, it will always be worth while to carry on the manufacture. If it falls short, the

industry of the natives, and the materials of the kelp, will be better applied in other channels of agricultural industry.

A species of manufacture, which has not, indeed, as yet been attempted, but for which we think this district well calculated, is that of rope-making, net, sail-cloth, and cordage-making, in their various branches. For the successful prosecution of this manufacture, there is no situation perhaps better suited in the Hebrides than Bownmore in Islay, Tobermory in Mull, and the neighbourhood of Isle Oransay harbour in Skye. A ropery requires but little outlay of capital to set it on foot; the demand for the article is certain and constant in the district itself, at a good price; the consumption of it is perpetually increasing with the augmenting resources, industry, and population of the country, and the raw materials might very cheaply be raised on the spot. There is scarcely an objection which can be urged against the establishment of hempen manufactures, of the simpler kinds, in the Western Isles; and the man who shall first commence them, will deserve well of his country.

Tanning leather, and dressing it for various purposes, might also be introduced with success, especially on the large Hebrides. As bark, however, is scarce and expensive, this branch of industry cannot be expected to make a rapid progress.

Cooperage, or the making of casks, barrels, creels, and other implements for the use of fishermen, has been long carried on with great advantage in Greenock, and Rothesay; and might be tried with every probability of success in the stations already mentioned

as suitable for the hemp manufacture. The landlords should begin by planting considerable quantities of willows, and other trees already recommended,* and supplying intending manufacturers, or coopers, with them at a very low price; as well as giving them every possible encouragement in regard to dwelling and accommodation. An establishment of this sort should take place in the vicinity of the best fishing stations, such as those of Portree in Skye, Loch-Roag in Lewis, and in what are called the Inner Sounds.

The manufacture of agricultural implements might be combined with cooperage, and conduce greatly to the improvement of the country, and the advantage of its inhabitants. These implements would be gradually improved in form and solidity—new ones would be invented or brought into common use, which are now only known in a few of the more advanced islands; and many agricultural improvements, dependent upon the nature of the implements employed by the natives, would follow in their course.

The introduction of such manufactures would not only provide profitable employment for that portion of the Hebridian population which is at present a burden upon the proprietors, and comparatively useless to the community at large, but also promote the interest of the country, and greatly increase the rents of land and the general wealth. The ground in their neighbourhood would be cultivated, and turned to the best account;—waste lands would be reclaimed from an unproductive state to let at L. 2. or L. 3. an acre;—habits

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* Vide p. 335.

The effects of commerce upon agriculture have been but faintly and partially experienced in the greater part of these isles. One cause of this is the total separation of the agricultural and commercial property of the country. These will, in the nature of things, long remain in different hands; for there is not a sufficiently extensive field for raising the merchant to the independence and dignity of the landed proprietors, as in other parts of the kingdom; and consequently, the mutual interests and bearings of these respective ranks in the community, as well as the influence of their pursuits upon the condition of the district, must be widely different.

SECTION VII.—FISHERIES.

THESE do not strictly belong to an agricultural survey; but they are of very essential importance to the Hebrides, and therefore merit notice in this place. They bring into those isles L. 200,000. per annum, at an expence perhaps of L. 120,000. *i. e.* they yield a clear profit in money and sustenance of L. 80,000. to the natives. They occupy, together with the kelp manufacture, 2562 boats and vessels of every description, and for some months in the year 10,500 sailors. It is true that these numbers are not regularly engaged or employed every season, but they approach very nearly to

to the average of the last 10 years. The fencible men, or those between the age of 16 and 60, being one-fourth of the population, are 22,762; so that nearly one half of the effective male population is connected with the fishery. The principal fishing ports are Rothasay in Bute, Stornoway in Lewis, Tobermorey in Mull, and Portnahaven in Islay; but the districts of Harris, Barray, South Uist, Skye, and various other islands, fit out a number of boats annually, or supply the Clyde busses with excellent mariners and fishermen.

SECTION VIII.—THE POOR.

1. *Their state.*—The Hebridian proprietors, especially such of them as are personally acquainted and occasionally reside with their tenants, are distinguished by humanity and liberality to the poor. It would be invidious to name any one in particular, where almost all may claim a similar distinction; and as praise or parade is not the object of their desire, but the pure enjoyment of doing good, we venture not to fix the public attention upon any in preference to the rest, or even to allude to such of them as manifest the noblest Christian dispositions. The poor are not so numerous, nor by any means so troublesome to the community in the Hebrides, as they are in the greatest part of the United Kingdom.

Kingdom. A greater number of beggars is seen in travelling one stage in Ireland, and in traversing the streets for one day in Edinburgh or Liverpool, than is usually met with in a whole summer excursion through the Hebrides. In the last mentioned, none beg but such as are real objects of charity: they are evidently ashamed of having recourse to the precarious bounty of strangers, and contrive to remain as long as possible among their own acquaintance, their friends, and relations. The Hebridian too is habitually mild and charitable. He cheerfully partakes with a stranger, and as cheerfully shares and distributes what is his own. He has also a great veneration for age and misfortune; and when these (as often happens) are combined with good address, a frank and communicative disposition, and an amusing talent, the business of the beggar is very easy: he finds an open door everywhere, and hearts and hands "open as day to melting charity."

2. *Annual Receipt and Expenditure.*—The number of poor who receive alms and occasional aid from the kirk-sessions of the 31 parishes of the Hebrides, is about 1,300. The sum distributed among them, at an average of 10 years prior to 1809, was very nearly L.650.* This sum is so small in proportion to the extent and population of the country, that it will scarcely appear credible to a man accustomed to the poor-rates of England and Ireland, and to the assessments occasionally made for the poor in our populous districts. It appears, from the *Observations on the Poor's Laws*, by Mr. George Rose, M. P. compared with other authentic

* Vide, *Supra*, p. 126.

thentic documents, that the sum raised by the poor-rates in England, in 1803, was L.5,161,813. or nearly in the proportion of 11s. 6d. for each individual of a population of 9,000,000 souls. Supposing, for the sake of round numbers, the population of the Hebrides to be 90,000 souls, the sum apportioned to each annually, would be only one penny and one-third!! But the disproportion of the numbers relieved in both countries is still more alarming and singular. In England, the number relieved was 1,039,711 individuals, or somewhat more than *one-ninth* of the total population of the kingdom, in the Hebrides only 1,300, or very nearly *one* person out of *seventy*. The average sum granted to each pauper in England, was about L.4. per annum; that to the Hebridian 10s.!!—The assessment upon the pound sterling of real rent, was, in England, 4s. in the Hebrides one penny and one-third of a penny per pound sterling.

These facts are important to the political economist. They speak in plain terms to the legislature, and demand its most serious attention, and perhaps its speedy and vigorous interposition.

3. *Sums raised by rates.*—There is not a shilling raised in this way, or by any compulsory means whatever in the Hebrides. There are also no *work-houses*, nor *houses of industry*, nor *box-clubs*. The last mentioned might certainly be established with good effect, and it is difficult to conceive any disadvantages which could attend them. They would very powerfully conduce to maintain the moral independence and honest pride of the lower classes of society; and thus prove a bar to the diffusion of that spirit of debauchery and extravagance

travagance of which enlightened patriots complain so vehemently in the southern division of our island. As the poor in the Hebrides are, however, in their present state, tolerably well supported, and at a cheaper rate than any other poor in our empire, it would be a delicate matter for any proprietor to attempt a change in their management. The ladies of residing proprietors, and of the wealthier ranks in the district, are peculiarly active and humane in relieving the indigent poor. Many of them keep quantities of medicines for that express purpose, and are at considerable expence in supplying wine, Jesuits bark, &c. ; not only to their own tenants and dependents, but also to every poor person whose situation comes to their knowledge. Nothing but the most amiable spirit of charity and benevolence could prompt to the constant and watchful exertions which came within our experience on this head, in the course of the survey ; and we felt the full conviction, that, while other ladies in the kingdom may display equal or superior powers in pleasing the public eye, there are none so eminent as the Hebridian for delicacy, mildness, and perseverance in relieving private distress.

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SECTION IX.—POPULATION.

THE population of this remote district, and its progress or decay, form an interesting subject, which well deserves the consideration of government and of the public. Previously to 1750 no attention had been paid to it, and subsequent lists have been often very deficient and inaccurate. Early in the 18th century, Martin supposed the Hebrides to contain 40,000 souls, and soon after the number was conjectured to be 50,000 by Chamberlayne. These computations, however, were the results of mere guess, neither founded upon certain data nor particular inquiry. The following table contains the number of inhabitants at different periods; and was formed partly from the reports of clergy and catechists, and partly from those of gentlemen intimately acquainted with the different parishes.

The last column, containing their population in 1808—1809, as nearly as the author could ascertain it, will be observed to have more round numbers than the others; but he is confident that he is very near the truth, and that various circumstances have, in his case, conduced to facilitate an inquiry which had formerly been rendered more difficult and disagreeable by the prejudices of the natives, and their notion that lists of population are made chiefly with a view to military arrangements or fiscal taxation.

Parishes.

Parishes.	Church Record, A. D. 1750.	Dr Webster, 1755.	Dr Walker, 1771.	Sir J. Sinclair, 1791-8.	Government 1801.	J. M., 1808-9.	Isle of
1 Barray,	1285	1150	1395	1604	1925	1969	Barray.
2 Barvas,	1775	1995	Vid. Uig	2006	2233	2301	Lewis.
3 Bracadale,	1714	1907	2000	2250	1865	2560	Skye.
4 Cumbraes,	252	259	520	509	506	650	Cumbraes.
5 Diurnish,	2685	2568	3600	3000	3327	4100	Skye.
6 Gigha,	463	514	550	614	556	850	Gigha.
7 Harris,	1993	1969	2085	2536	2996	3420	Harris.
8 Jura & Collonsay,	1097	1097	1456	1858	2007	2060	Jura & Collonsay.
9 Kilbride,	1224	1369	2300	2545	2183	2480	Arran.
10 Kilmorie,	2179	2277	3103	3259	2996	3700	Arran.
11 Killarow,	5344	5344	4300	} 9500	10,570	11,500	Islay.
12 Kilchoman,	uncertain	annexed	annexed				Islay.
13 Kildalton,	uncertain	3200	3200				Islay.
14 Kilfinichen,	1616	1685	1676	3002	3410	3500	Mull.
15 Kilmuir,	1581	1581	1900	2500	2555	2990	Skye.
16 Kilninian,	2449	2590	2650	3281	3601	3840	Mull.
17 Kingarth,	979	998	979	727	875	790	Bute.
18 Lismore†,	2449	2812	3178	3526	3243	3154	Lismore.
19 Lochs,	1030	1267	Vid. Uig	1768	1875	2260	Lewis.

20 Portree,	1250	1385	1466	1980	2246	2500	Skye.
21 Rothsay,	2000	2222	2658	4092	5291	6057	Bute.
22 Sleat,	969	1250	1686	1788	1908	2180	Skye.
23 Small Isles,	858	943	1157	1339	1500	1800	Eigg, Canmay.
24 Snizort,	1370	1627	1700	1808	2144	2445	Skye.
25 Stornoway,	1896	1812	Vid. Uig	2639	2974	3450	Lewis.
26 Strath,	1102	943	1200	1579	1748	2200	Skye.
27 Tyree & Coll,	2704	2702	2881	3457	3500	4390	Tyree & Coll.
28 Torosay,	979	1012	1200	1733	1784	1880	Mull.
29 Uig,	1286	1312	Lewis	1998	2086	2511	Lewis.
30 Uist, (North)	1836	1969	2281	3216	3010	4012	N. Uist.
31 Uist, (South)	1958	2209	2565	3450	4595	5500	S. Uist.
Total,	49,485	52,280	62,788	75,468	79,354	91,049	

* It is probable that the whole population of Islay, at that period, was 5344, as given under the title of one parish.

† We give the whole population of the parish of Lismore and Appin, instead of one half of it, to the island of Lismore, because it was so done in 1750 and 1755; and in order that the gradual increase or decrease of the whole parish may be preserved according to the documents which exist concerning it.

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From this list it appears, that the Hebrides have, instead of suffering a diminution of their population, been increasing more rapidly than any other district in Great Britain. They have nearly doubled their population in 58 years; and that too notwithstanding the considerable drains from it, by emigrations to America, and by a number of regiments occasionally raised by the proprietors, as well as by the usual resort of the natives to the wealthier parts of the empire.

The state of society in which the inhabitants are placed, is very friendly to their increase; their occupations being agriculture, pasturage, and fishery. They are, in general, mildly treated by the landed proprietors, who grant them lands upon easy terms. Their sustenance is cheap and simple, and their manners virtuous. They marry early in life; the number of married servants is great, and diseases and barrenness are very unfrequent. These *positive causes* of population subsist, while the depopulating effects of unwholesome situations, of great cities, of unhealthy manufactures, of luxury, vice, and dissolute manners, are almost entirely unknown.*

In consequence of these favourable circumstances, we found that the number of persons in each family in these districts is considerably above the average of the kingdom: *Five and a fraction, nearly amounting to one-seventh*, is the average of Hebridian families.

The dangers to which the males are exposed, occasions a disproportion between the sexes, to a degree perhaps

* Vide Walker's Hebrides, vol. i. p. 32.

haps greater than what occurs any where else in the country parts of Britain ; and which, without the positive causes of increase already mentioned, would affect the population to a considerable extent ; but marriages are so early and frequent, that this disproportion is powerfully counteracted.

When we consider that there are no manufactures of any consequence (excepting that of kelp,) in the Hebrides, and that the fisheries occupy only *an eighth* part of the inhabitants for a short period of the year ; this rapid increase of the population is a high compliment to the proprietors of this country. How absurd and unjust then the complaints lately brought against them from various quarters, (and re-echoed by persons who ought to have known the truth, and to have defended it,) of depopulating their estates for the purpose of raising their rents, and of forcing their tenants, by cruel usage and oppression, to leave their country and the dwellings of their fathers, without knowing to whom to apply for relief ? A few solitary instances, and but a very few, occur, indeed, of expatriation in this way ; but less blame attaches to Hebridian proprietors than to any other landlords in Britain on that account ; and it may well be said of the great majority of them, that they are “ eyes to the blind, feet to the lame, and the blessing of those who are ready to perish.”

The detriment which the Hebrides would sustain in their present state, by parting with a portion of their inhabitants to our army or navy, is comparatively small. Upon any great emergency, they may be considered as capable of raising eight capital Highland regiments, and manning two sail of the line, without any loss to the

country that would not soon be recovered: and if no events fall out unfriendly to their population, they would also be capable of supporting these regiments and ships in the service, by a regular supply of new levies.*

In the Highlands and Hebrides, as in other countries, the most productive lands abound most with inhabitants; the least productive being always the least populous. Accordingly, wherever the rent is highest, the proportion of inhabitants is always largest, compared to the extent of land which they occupy. This proportion varies, indeed, in different parts of the Hebrides; but, in general, the number is smaller, and the country which they inhabit more extensive, than is to be found in most other parts of the British dominions.

The number of people in the Hebrides being pretty accurately known, and a calculation made, as nearly as possible, of their extent in square miles and acres, it was, from thence, found, that some of the most fertile and populous islands, north of Kintyre, contain about 10 acres for each individual inhabitant. Others were found to contain 50, others 100, others 150, and one nearly 180 acres for each person. The average, however, of all the Hebrides, is very nearly 17 and a half acres to one individual; and, of that extent, nearly 1.9 acre (or almost two acres,) is arable land†.

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* Vide Walker's Hebrides, vol. i. p. 46.

† The proportion of births to marriages is as $4\frac{1}{2}$ to 1, and that of males to females as 20 to 19. The births are to the deaths as 19 to 17. One person out of 45 dies annually,

The quantity of rent paid by the population varies considerably in the northern and southern isles, in proportion to their extent. While Islay might easily pay 3s. and actually pays 1s. 10d. per acre, Lewis can scarcely be improved in a century so as to pay 6d. and pays at present for her land, (exclusive of kelp,) only three farthings an acre. The general average of all the Isles is 1s. 4d. annually for every Scotch acre. The same disproportion holds as to the rental, compared with the number of the people on the different islands. A comparison between the number of inhabitants and the rent of land is an article worthy of observation in the economical history of every country. From such comparison, a general estimate may be formed of the fertility, or advanced improvement of any district. As the soil is more or less productive, the rent of land bears a greater or less proportion to the number of people.

In some of the best Hebrides, it is found that each inhabitant corresponds to 30s. of rent. This is the case in Gigha, Collonsay, part of Islay, Lismore, and a considerable portion of Skye and the Long Island. In

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in districts not visited by any infectious or epidemical distempers; but it sometimes happens, that 1 out of 30 dies in particular islands. There are more females than males above the age of 7 in the Hebrides.—The proportion, till the age of 30, is as 25 to 23, nearly; and, after the age of 35, the women are to the men as 25 to 22,—and, on a few islands, as 25 to 20.

others this proportion varies from 50s. down to 18s. 12s. and even so low as 6s. The average of all the Hebrides is between 23 and 24s. of rent for each individual inhabitant.

In some parts of Scotland, (as for instance the county of Berwick,) the rent is L.6. or L.7. for each inhabitant: a proof of the great comparative backwardness of the Western Isles, and of the immense amelioration of which these extensive regions are susceptible.

From what we have advanced, it appears that the Western Islands of Scotland rapidly increase in population, having nearly doubled it in the space of 60 years. It also appears that their progress has lately been more than usually great, owing, probably, to the rarity of emigrations;—to the more general introduction of the kelp manufacture, and the consequent increase of the number of tenements of land;—to the improvements adopted in the cultivation of potatoes;—and to the general introduction of vaccination, and the approved methods of inoculating for the small-pox. To these causes it is but fair to add, also, the almost universal humanity and benevolence of the landlords. The last mentioned are, perhaps, of all proprietors in Great Britain, those who make the most substantial sacrifices of their rents

rents and income to the accommodation of their tenants. Some of them we have already had occasion to mention; but many others might be named as benefactors to their country, and steady friends to its population. It is not meant to insinuate, that their conduct in giving lands in small portions to persons who are not in a situation to turn them to good account, is, upon the whole, beneficial to themselves, or even to those whom they thus accommodate; but, surely, their mild treatment of poor people, for whom they have no other means of providing, and whom an English or Lowland proprietor would at once turn adrift into the wide world, deserves a better name than what many travellers and economists are often pleased to bestow. If it be not humanity and charity, we are at a loss for any meaning to those terms.*

The great question is to provide room and employment for the surplus population, which cannot at present receive any considerable portions of *good land* from the proprietors, but who might gradually reclaim waste lands, and, in the course of a few years, enrich themselves and their benefactors by the produce of their labour, as well as contribute to the resources and power of the kingdom! The introduction of manufactures, such as we have already named under the proper head; the establishment of villages and fishing stations in eligible situations; and the settlement of cottars, or labourers, in suitable places on all large farms, will be the only means of solving this difficulty.

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* Vide p. 65, et passim.

considerable change has, of late years, taken place in the turn of mind common to the youth of this district. They have no longer any predilection for the military life: on the contrary, their abhorrence of it is deep-rooted and inveterate. This is the fact, whatever may be the cause to which we may impute it. The same antipathy exists against the naval service of their country: so that we need not look for any voluntary levies from these isles, as long as the natives remain in their present way of thinking, and the present modes are followed of recruiting our navy and army. To change this turn by force would be an arduous, if not an impracticable undertaking; and the best way of getting the better of it is, perhaps, as in other parts of Europe where similar habits and dispositions are predominant, to oppose some powerful propensity of the national character to it, and thus to induce the inhabitants to embark in a military career, from a consciousness that it is for their own personal interest.

We have mentioned, p. 70 and 71, "that the very idea of possessing a spot of land which he can call his own, has an incredibly favourable effect on the Hebridian's mind; and that no people in the world have so great a value for land, or attach so high a notion to the importance of landed property, even in the smallest portions, as the natives of these remote islands. Now were military and naval service, in the mildest and least repulsive forms, conjoined in the Western Isles with grants of landed possessions, it is highly probable that the antipathy to such service would speedily vanish. Various methods might be adopted for reconciling this system with British freedom and independence, and the

the idea itself is not by any means so repugnant to our feelings of liberty, as the plan usually resorted to for procuring sailors for the royal navy. The system here alluded to has long been matured and acted upon, and that too with great advantage, by the Austrian government. On the Turkish frontier, lands holding of the crown are allotted to families, which are bound to military service on certain conditions. These conditions are so favourable, that the country in question has tripled its population within the last 70 years; and it has for 30 years past contributed more to the defence of that empire than double its quantum of population in any other part of it. There are 15 regiments of the finest militia in the world, each regiment comprehending 3175 men, making a total of 47,625 soldiers, exclusive of officers, constantly maintained by a population of 500,000 souls*. In the same proportion the Hebrides, which have many advantages over the districts alluded to, and especially an excellent fishery, might support a regular militia, ready to serve in any part of the British empire in Europe, of from eight to nine thousand men, without any serious drawback upon their agriculture. Government might easily form an arrangement with the great Hebridian proprietors, which might bring this measure to answer on most of their estates; and our King might thus, instead of purchasing vagabonds and jail-birds of every description at L. 30 per individual, retain in constant service, and ready for the defence

* Vid. Guibert Voyage dans les Etats Autrichiens.—De Luca, Liechtenstern et Schwartner.

fence of their country, the finest soldiers in Britain at L. 10 or L. 12 each man.

It is not our province to enlarge on this interesting subject, otherwise it would be easy to shew both the practicability and the expediency of it in the present crisis of our country.

L. Is the district over or under peopled?—and at what price of wheat?—This question may apply to some quarters of England, but not to any with which we are acquainted in Scotland, and far less to any in the Western Isles. Some of these islands, such as Tyree, Eigg, Rùm, Coll, Icolmkill, &c. are unquestionably over-peopled, as are likewise many districts of the larger isles, such as Trotternish in Skye, Peabill in North Uist, several parts of Islay and Mull, and the finest part of the Isle of Arran; but there is not only room enough for the surplus population of those parts in the other islands taken collectively, but also abundant scope for five times the present population, were a regular mode of subdividing and employing it adopted by the proprietors. The expence of the population cannot be calculated in wheat, for the great body of the people know that grain only by name, nor indeed would it be easy to ascertain with precision the expence of each individual in the commodities yielded by the country: Perhaps five bolls of oatmeal annually, or one boll of meal and potatoes to the amount of the other four bolls, is a fair average. At that rate, the islands of Islay, Skye, and the Long Island, might feed all the population of the Hebrides.

2. *Healthiness of the district.*—The best proof of this is the rapid increase of the population, notwithstanding the want of trade, manufactures, and commerce; the circumstance above stated, of the deaths being to the births as 17 to 19, and also the almost total want of surgeons and physicians in these isles. They have for ages been reckoned very healthy; and shew at this day as many men and women at an advanced period of life as any equal portion of the British population. The proportion of deaths to births is made more considerable than it would otherwise be by the perilous nature of the occupation followed by a large proportion of the inhabitants: considerable numbers being drowned at sea, or in crossing rivers, ferries, and fords, every season.

3. *Food and mode of living.*—After what we have had occasion repeatedly to state concerning the productions of the Hebrides, and the maintenance of the inhabitants, it will not be necessary to dwell long on this subdivision. Potatoes form at least four-fifths of Hebridian nourishment *. There are 30,000 acres annually under this crop in the district, and the quantity is increasing year after year. The average produce of an acre of potatoes in the Hebrides, (taken collectively south and north,) is nearly 30 bolls, and is worth from L.10 to L.12 Sterling, according to circumstances. Such acre yields potatoes enough for $7\frac{1}{2}$ individuals annually.

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* Vide p. 222.

The article of food most common after potatoes, is oat and barley meal. The former is used on the richer islands, but the latter in the range of the Long Island, Tyree, Coll, and a few districts of the smaller isles.

Of this meal, (*viz.* oat and barley meal,) about 80 thousand bolls are consumed yearly by the 91,000 souls of population. The rest of their food consists, as just mentioned, of potatoes, of imported groceries, biscuits, and other provisions, fish, shell fish, meat, fowls, game, milk, and garden stuffs

The mode of living is the simplest and most economical imaginable, as appears from what has been already stated, and yields no materials whatever for enlarging this part of an agricultural report. Cleanliness is generally wanting; but the natives begin to improve in that respect, and in Islay and the more advanced isles, they are on a par with the inhabitants of other districts in the remoter parts of Scotland.

CHAP.

CHAPTER XVII.

OBSTACLES TO IMPROVEMENT.

THE obstacles to improvements, which are obvious to every person in the least acquainted with the Hebrides, are of a different description from those enumerated in the plan of the reprinted reports to the Board of Agriculture. They are many and great; and some of them cannot possibly be altogether removed. Others may admit of diminution and gradual alleviation by the kindness of government and the active interference of the proprietors, and many of them may be overcome by the exertions and industry of the natives. We shall briefly advert to these in the order now mentioned.

1. *Such obstacles as cannot be altogether removed.*—
These result from the local and natural disadvantages
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of the country ; its distance from the large towns and populous parts of the empire ; the non-residence of the proprietors ; its insulated situation ; its boisterous climate and precariousness of weather ; its disadvantages with regard to markets, mechanics, artisans, implements of husbandry ; its scarcity of timber and of fuel, and the general nakedness and ruggedness of the soil. It is true these disadvantages, and these obstacles to improvement, cannot be wholly removed ; but they may admit of considerable alleviation by means of the measures to which in the course of this report we have had frequent occasions to allude. The climate might be greatly ameliorated by plantations and inclosures. These would not only promote warmth and dryness of soil, but also tend to shelter cattle and corn from the violence of the weather, so as to give the climate a very different effect and appearance from what it has at present. The obstacles which the precariousness and difficulty of communication with the markets of the richer districts of the kingdom present to Hebridean improvements, are gradually diminishing, in consequence of the roads and bridges which are making in different parts of them, and they will soon be removed in a very considerable degree by the patriotic efforts of individuals, and the paternal attentions of the legislature. Much, indeed, remains yet to be done ; but it is gratifying to compare what these islands now are with their state according to the most authentic accounts half a century ago ; and we may look forward with confidence to accelerated advances in every species of agricultural improvements in consequence of what is doing at present by Mr Campbell of Shawfield, Mr Macneill
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of Collonsay, Mr Macneil of Gigha, and many other proprietors and farmers in the southern isles, as well as by the noblemen and gentlemen whom we have formerly named in the less advanced districts.

2. *Some serious obstacles to Hebridian improvements may be alleviated by the exertions of the proprietors and the kindness of government.*—Under this head come the salt and distillery regulations; the establishment of packet boats in proper stations; the founding of villages by granting long leases, feus, or perpetuities of certain portions of land; the regulation and uniformity of weights and measures; the introduction and encouragement of mechanics and manufacturers, and the cultivation of hemp and flax; the maintenance and steady support of schools, artisans, and regularly bred fishermen, dykers, ditchers, drainers, and day-labourers in all suitable situations; and, lastly, a system of regular occupation connected with the military and naval defence of the country.

3. *Some obstacles may be overcome by the exertions and industry of the natives themselves.*—The climate is never so severe as to present insuperable difficulties to early tillage and early sowing. It follows, therefore, that late harvests, and the mischiefs which rarely fail to accompany them, are the consequence of the providence and carelessness of the people. They generally lose at least three weeks or a month of spring, and reap those crops in the latter end of September, or in October, which they might reap, if earlier sown, in August and September. This species of neglect is more pernicious

pernicious than is commonly imagined, and occasions more mischief than the natives seem to conceive possible. Scourging the little arable land of good quality, which every farm possesses, with a succession of white crops for several years without intermission, is a most injudicious and hurtful practice over all the northern and many of the southern isles, and until it is abandoned, will, for ever, keep their agriculture in a state of infancy. Want of subdividing, appropriating, and inclosing their lands, is the bane of the smaller tenant, throughout the Hebrides. They cannot too soon or too carefully shun the old practice in this matter. The same description of tenants overstock their farms with cattle, sheep, and horses, to a degree which must bar the way to improvements both with regard to their lands and their live stock at the same time; for they never can manage land in a proper manner which is poached and torn up by the feet of innumerable herds during spring and autumn, and of which every blade of grass that raises its head above ground is instantly torn up by the roots; nor can they raise improved breeds, or individual beasts of tolerable form and size, upon lands which are almost always doubly stocked.

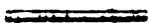
The tenants might by industry and attention greatly improve both their dwelling and office-houses; and, by so doing, promote their own comfort and the value of their live-stock in a very eminent degree.

These are but very general views of what the tenantry in the western isles might effect, solely by their own exertions: The more particular details shall be given by and by.

CHAP.

CHAPTER XVIII.

MISCELLANEOUS ARTICLES.



SECTION I.—AGRICULTURAL SOCIETIES.

THERE is but one society of this description in the Hebrides, viz. The Hebridian Agricultural Society of Islay, established a few years ago, and managed with much spirit and judgment. Some specimens of the produce of different districts in the vicinity are occasionally produced at the meetings of this society; and much useful knowledge is disseminated by the members, in consequence of their friendly intercommunications upon the experiments and improvements which are carried on among them. Mr M'Neill of Collonsay is the present president: Mr Campbell of Shawfield pays every possible attention to the society; and all the neighbouring gentlemen enter with eagerness into the

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views of these enlightened and active friends of agriculture.

Were there similar societies established in Skye, Mull, and North Uist, the Hebrides might derive considerable benefit from them. They not only tend to promulgate useful information on agricultural and rural subjects, and to inspirit the members in carrying on improvements which they would not otherwise attempt, but also promote good neighbourhood and social dispositions in the district. A dance, or assembly, usually concludes the transactions of the society. The families of the members meet from different and distant parts. Friendships are formed and confirmed. Relatives meet and renew their intimacy. The period of future meetings are looked forward to with pleasure; and thus every agreeable association of a kind-hearted, hospitable people, is connected with objects of high utility, and which promote their own happiness, as well as the welfare and resources of their country.*

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* The objects more immediately demanding the attention of such societies in the Hebrides, are the following; viz.

1. The expedient alterations and improvements in tillage and pasture.
2. The most perfect, and least expensive, implements of husbandry.
3. The best sorts of grain, and other crops, to be used; and the most eligible changes and management of seed corn.
4. The improvement of the breed of cattle, and that of the dairy.
5. The most proper methods of constructing and upholding the

SECTION II.—PROVINCIAL TERMS.

The language of the Hebrides is the ancient Celtic, commonly but falsely called *Erse* or *Irish*; a language at once powerful, copious, and original; and perhaps the most ancient living tongue at present to be found in Europe. This language occurs in its greatest purity in the main-land and islands of Inverness-shire, and in those districts which

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the fences best adapted for the country; and the means of encouraging common tenants to build them.

6. The old and hurtful practices in husbandry to be discontinued; and those which are beneficial, though new, to be introduced.
7. To promote the separate exercise of the mechanical employments, connected with agriculture, as well as the fisheries and manufactures.
8. The advancement of plantations and gardening.
9. The discovery and use of natural manners; and the judicious application of such as are common in the Isles.
10. To communicate and disseminate the knowledge of useful experiments and practices.
11. To distribute premiums among the operative farmers; and to keep alive the flame of public spirit in the breasts of private men.
12. To facilitate communication and intercourse with other parts of the British empire.—Vide Walker's Hebrides, vol. ii. p. 416.

are most remote and sequestered, or have least intercourse with the rest of the kingdom. It is also found undebased by English or Scottish idioms, in some parts of Ross-shire, Sutherland, and Argyle ; but, in Perthshire, Caithness, and the parts which border on the lowlands of Aberdeen, Moray, and Dumbartonshire, it is contaminated with a multitude of expressions, which render the dialects of those parts ludicrous to a genuine Highlander, and give the language a compounded and imperfect air. Such views of it, however, are very inadequate to its merits. The real uncorrupted Highland or Hebridian language, is noble and energetic. The powers displayed by the natives in conversation, and in their pleadings at the baron bailie courts, are truly astonishing. The eloquence exhibited there would not be believed by any stranger unacquainted with the habits and the language of this people, and certainly is unequalled in the British empire ; excepting, perhaps, in a few corners of Ireland, where a dialect of the same tongue, though considerably degenerate, still exists. The powers of language alluded to may, probably, be in a greater measure derived from the manners and habits of the natives, than from any peculiar felicity in their vernacular language ; but, whatever may be the cause, the fact is certain :—The mountains and vales of the Hebrides contain more genuine elegance, more astonishing readiness of expression, a greater command of words and ideas, and these well arranged, luminously arrayed, and powerfully and ingeniously adapted to the speaker's purpose, than we have found among the same classes of people in any other part of Europe.

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Some men, (from pure motives no doubt,) have suggested the propriety of extirpating this language, by forbidding its being printed or written, or taught to children in the parochial and charity schools; and by every other devisable means usually resorted to for destroying languages. This would, as they fancy, produce a very desirable uniformity of tastes and opinions, remove national prejudices and jealousies; and confirm and consolidate that political union which binds this portion of our population to the rest of their countrymen:—It would, (they add,) remove, at the same time, many obstacles which now keep the natives backward in point of civilization and refinement.

Now, granting that there is some plausibility in these arguments against the ancient and venerable language of our once powerful and gallant nation, it may be answered by the Hebridian:—That his language is, in itself, at least as good as the English, or any base bastard tongue, made up of mingled materials, huddled together accidentally into a barbarous jargon, by the pirates and robbers of modern Europe; and composed of Frenchified Latin, Low Dutch, Danish, Swedish, Scandinavian, Saxon, &c.—That language, being merely an instrument for conveying ideas, and his own Celtic being fully equal, or superior, to any other in that respect; (a proof of which he has in his own superiority to the common Lowlander, or Englishman, in argument and in description;) he cannot see the use of throwing away a better instrument, with the use of which he is acquainted, and taking a worse in its room, to which he is a perfect stranger:—That he is as good a soldier, sailor, and subject, as if he spoke the dialects

of York or Aberdeen :—That his own language neither blunts his sword, nor unnerves his arm, in the day of battle ; and that there is no connection whatever between the Celtic language, and any evil passion towards God or man,—towards King, parliament, or nation.—That it is a difficult and ungracious task to force any language upon a population of 400,000 souls :—That the English already *undermines* the Celtic ; and will, probably, in a few ages, without any direct assault, banish that language from this kingdom :—and that, therefore, it would be harsh and impolitic to refuse instruction to the people of these districts in their own language, or to punish them in the interim, in order that posterity may receive some contingent advantage, of which they have, at present, no clear conception, &c.

There are no provincial terms in the English used here by the higher classes ; nor is any glossary requisite for understanding all expressions common among them. They write and speak the language of the best English writers ; and are equally strangers to the broad Scotch, and to the vulgar provincial dialects of England.

CONCLUSION.

CONCLUSION.

MEANS OF IMPROVEMENT, AND THE MEASURES CALCULATED FOR THAT PURPOSE.

THESE have been dwelt upon occasionally in different parts of this report ; and all that is now proposed, is to bring them into one point of view, in as contracted a shape as possible. The late Dr Walker, in his *Economical History of the Highlands and Hebrides*, is of the same opinion with the reporter, with regard to the adoption of most of the following measures, for the improvement of the Western Isles ; and many persons of information and influence in that extensive region, have expressed similar sentiments upon the subjects in question.

TENURE OF LANDS.

1. SUBSETTING of lands should be gradually abolished, excepting in some of the remoter and larger islands, where gentlemen farmers are necessary for the maintenance of good order in the country.

2. All possessions in land should be occupied either by leases for at least 9 or 10 years, and upwards, to 30 years, or by feus, or during a number of lives. Such leases to be granted by the proprietor, and couched in as plain language as possible, and burdened with as few conditions and stipulations as is consistent with the mutual interests of landlord and tenant.

3. Every farmer, or tenant, should have his possession disjoined from those of other tenants, and completely at his own disposal. Run-rig and co-partnerships in tillage and paying rents, ought, in every case, to be done away.

4. Every lease of consequence, especially if its duration be of considerable length, ought to have some stipulated improvements ingrossed in it; such as inclosing, draining, reclaiming some portion of waste land, observing a proper rotation of crops, and such other conditions as evidently benefit the tenant himself, while they ultimately conduce to the advantage of the proprietor. Such stipulations must be clearly explained to the tenant, and meet with his hearty concurrence and acceptance,

acceptance, otherwise they must prove ineffectual, and even pernicious, both to the master and the tenant.

5. There should be a just proportion between the farmer's stock and the extent of his farm.

6. Rents should be in money, instead of corn, fish, butter, wool, or any other commodities; and services of every kind, as well as all burdens usually borne by the tenants, should be incorporated with the gross rent. In this case, resident proprietors may easily purchase from their tenants the necessities of which they may stand in need, and also the services which they may occasionally require. A certain number of days in harvest time, now due by the tenants, ought to be commuted for an adequate sum in money; and every similar vestige of vassalage done away.

7. Every resident proprietor ought to encourage regular day-labourers to settle on various parts of his estate, but especially in his own neighbourhood, and within easy reach of the parts of his property which he intends to improve. Cottagers also ought to be encouraged, by giving them cow's grass, and some acres of waste land gratis, for some years at first, raising the rent gradually and very moderately upon them according to circumstances. Even the day-labourer and cottager should hold his landed tenement by lease,—and be perfectly secured in the possession of his time, and the fruits of his labour.

8. Stipulations and conditions of every kind which relate to the tenure of lands, ought to be punctually observed, and rigorously enforced.

FARM BUILDINGS AND INCLOSURES.

1. EVERY tenant ought to have a barn and byre, or cow-house, separate from his dwelling-house. By this means he may keep his live-stock in much better order than he does at present ; and, at the same time, provide for his farm a considerable quantity of valuable manure, which is usually lost for want of such accommodation. In the vicinity of every farm-house there ought to be a kitchen-garden, fenced around in such a manner that neither sheep nor cattle of any description can have access to it. In such gardens considerable quantities of forest trees might be reared at no trouble or expence ; *as we find lately done in the island of Arran, by Mr Lamont, the Duke of Hamilton's Chamberlain there.* These gardens might also be nurseries, whence trees, of various sorts, would be transplanted into sheltered situations on the different farms.

2. Every house should consist of stones as the principal material ; and, where it is easily procured, or if the party concerned can afford it, lime as a cement. It ought to be thatched with heather, fern, rushes, bulrushes, or tiles, when slates cannot be obtained at a moderate price ;—and straw should only be used in cases of extreme necessity. The proprietor, or his deputy, should inspect and superintend all such buildings, as well as drains and inclosures.

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3. The natives should be encouraged to build regular Galloway snap-dykes, (such as we have described p. 164, 165,) and, for that purpose, some lowland workmen might be hired with advantage, for some seasons, by the greater proprietors in these districts. All the land, usually in tillage, should be gradually fenced with such dykes; or, where they thrive well, with stout thorn hedges. Such inclosures should never be smaller than 1 and a half acre, and rarely exceed 12 or 14; and they ought, in most cases, to be furnished with hedge-row trees, protected by wooden frames, or cairns of stones.

4. Every farmer should be encouraged to raise timber, by enjoying a proportion of such trees as he may rear, in property for himself and his family, at certain periods from the date of planting them. He ought to receive, on his removal from his farm, full compensation for such farm buildings, drains, and inclosures, as he may have constructed.

AGRICULTURAL IMPLEMENTS, &c.

1. Hebridian farmers should be gradually brought to use the newly invented and improved instruments of tillage and domestic labour. For this purpose, some young men should be sent from the larger isles, at the expence

expeuce of the landlords, to learn the business of smiths, wheel, plough, and cart wright, and coopers, &c.; and every facility should be afterwards afforded them for marrying and settling in their native country.

2. Most of the instruments at present in use must be gradually improved, changed, or laid aside. The caschrom in some situations is the only exception to this general rule: it ought to be retained, (though perhaps somewhat improved in the form of the iron head,) for the purpose of turning rugged and moorish, or very rocky soils, as well as for making and clearing surface drains.

3. The common lowland plough, drawn by two horses and managed by one man holding it and guiding the horses at the same time, ought to be universally introduced. The ordinary price of such plough, with a complete set of irons, is about L.4 Sterling.

4. The Hebridian harrow and harrow harness ought to be discarded. Heavy iron-toothed break-harrows are introduced into common use in the southern isles, and ought also to find their way into all the Hebrides.

5. Carts ought to be employed by all proprietors and farmers whose roads will permit the use of them. A horse will draw with more ease 16 hundred weight in a cart, than he will carry $3\frac{1}{2}$ hundred weight on his back, and the articles carried are much less damaged, and run less risk of being lost by the former than by the latter mode of conveyance. One horse will accordingly perform the work of five, and with infinite less wear and tear in the one way than in the other. The price of a small cart fit for common use in the Hebrides is about L.8 Sterling. It may last with tolerable usage for 10 years.

6. The present mode of building kilns for drying corn ought to be changed for one less subject to accidents by fire. The kelp kilns ought likewise to be improved, by being furnished *universally* (as is now partially done) with cast-iron bottoms, for the purpose of preventing earth, sand, or stones from mixing with the kelp during the process of burning or liquifying it.

7. Heather hooks should be used for cutting that plant close to the ground, for the purposes of thatch, litter, rope making, &c. as is done in some parts of Lower Saxony, and in Denmark and Norway.

8. Every parish in the Hebrides should have one or more plough wrights settled in it.

MANURES.

1. The vast resources in natural manures possessed by this extensive region are not turned to the best account; but they are such as richly deserve the attention of farmers and proprietors. They are clay—marl of different kinds—lime—sea shells—sea ouse or sleech—shelly sand—coral or coralline—and sea weeds. Of the last mentioned species of manure the natives lose the advantage of at least two thirds of the quantity which they employ, by mismanagement, in allowing the

the best part of the substance to escape before the land is ploughed down, and before the air and rains are excluded from injuring the manure. Vide p. 198.

2. Limestone should be burnt with peats, as is done so successfully in Islay by Mr Campbell of Shawfield's tenantry.* This is a great step in the improvement of that beautiful island.

3. Every farmer should pay most particular attention to the position of his barns and byres, and prevent the substance of the manure deposited in them from being lost. For this purpose more care should be taken than we usually see done to throw into the stable yards putrid earths, straw, the remains of peat stacks, the scourings of ditches, and whatever substances are known to promote fermentation, and prove useful in forming composts. By such means the quantity of manure might be doubled on those isles which have greatest need of it, such as Arran, Bute, Skye, and Mull, &c. its quality would be much superior to what we find it at present, and a large addition might be made to the farmer's annual crops.

4. Irrigation and flooding might be attempted with success on some of the isles, especially on some districts of the Long Island, a few farms in Islay and Skye, and several parts of Bute and Arran.

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* Vide p. 21. 395.

CULTIVATION OF THE GROUND, OR TILLAGE.

1. Instead of deferring the tillage of the land till late in spring, as is the common practice over all the Hebrides, it would be proper to plough the strong and stubborn ground in Autumn after the harvest is secured, and during the first two months of winter. This might easily be done, as the frosts rarely set in with any degree of severity before the middle or latter end of December, and even then they seldom continue for more than a week at a time. Vast quantities of manure too are at this time cast on the shores ; and some parts of it might be ploughed in with advantage, especially in the warm and dry soils.

2. The tillage of the land should be rendered subservient to green crops and grass, as well as to white crops. The ridges should be made straight, smooth, and as fit for the scythe as possible, by having stones and other incumbrances removed from their surface ; and they should always have an open drain at their lower ends.

3. The cultivation of potatoes should be limited as much as possible to waste-land, or newly reclaimed ground ; that root being found to answer extremely well as a first crop, or even as a first and second on such land.

4. Fallowing is to be encouraged for foul land, by granting to the tenant some deduction from his rent, or some other compensation for the quantity of ground
which

which he may have in fallow each year. This process will of course be gradually rendered unnecessary in proportion as the land throughout the Hebrides gets clean and recovers heart, in consequence of the cultivation of grasses and green crops, and of following the rotations already recommended in this report. Vide p. 191, &c. Chap. VII. Sect. 3d.

5. Draining is to be used with all possible diligence; and on the larger and mountainous islands, all drains intended for conveying water from the higher grounds should be open and very frequently cleaned from stones, gravel, and the deposition of the moisture which runs into them.

6. Rivers and arms of the sea which are land-locked, and consequently may be brought under controul at a moderate expence, ought to be embanked and prevented from damaging the adjoining grounds. Much might be done in this way in the Long Island, Arran, Jura, and Skye, and indeed in all parts of the Highlands and Hebrides where level lands are found contiguous to rivers and arms of the sea of the description just mentioned: Many thousand acres of valuable land might be reclaimed in the island of Uist alone, and that too at so inconsiderable an expence that the first two years crops would be sufficient to meet it.

WHITE CROPS.

1. Every farmer should calculate early in the season what quantity of his land he ought to have under white crops, and of what sorts those crops should consist. He ought then to procure a certain proportion of seed corn from other islands, or from some parts of Scotland best known for yielding in perfection the seeds which he wants. He ought by all means to change his seed as often as he possibly can, and rather to sell his own seed corn at an undervalue and to purchase at a high price, than want this indispensable accommodation.

2. The Hebridian farmer cannot be too cautious in adapting his crops to the nature and qualities of the soil. Moorish and porous land answers very well for turnips, potatoes, and green-crops, but they will not bear wheat, potatoe-oats, or such grains as powerfully exhaust the substance of a soil, or require a firm superstratum to keep them from lodging on the ground, and from rotting in a wet season. He ought also never to sow barley or potatoes, or other green crops in clayey soils or on a wet bottom; in short, he must study the nature and properties of his land with all possible care, before he ventures to sow any white crops; and he ought to be as sparing of these crops upon the whole as his circumstances will permit. The Hebrides are well known to be infinitely better adapted to the rearing of green than of white crops; and especially the rainy and mountainous parts of them.

3. Instead of selecting (as is too often done) the worst and feeblest part of the grain for seed corn, the farmer ought to take care that the very best, the plump-est, and healthiest portion of every year's crop shall be laid aside for seed. This is a matter of the last importance. We never can in any case, either in the animal or vegetable kingdom, expect to rear a vigorous offspring from weak or diseased parents; and it is preposterous to suppose that white crops should yield the only exception to a general rule in the works of nature. The practice of all other countries is a proof of their universal conviction, that good seeds are necessary for producing good crops; and the Hebridians and Highlanders alone seem to think otherwise.

4. The barbarous practice of pulling up corn by the roots, like flax or hemp, should be relinquished. This is done, indeed, for the purpose of increasing the length of the straw used for thatch, or perhaps it is done with a view to perfect the ripening of the ears of corn thus pulled; but it is extremely pernicious to the soil, and the mischief resulting from it is ten times greater than the advantage gained, or supposed to be gained, by the process. The very term used to denote this practice (*spionagh*, i. e. *tearing violently asunder*,) seems to convey the unfavourable idea which the natives had of it; but the imperfect state of agriculture, and various other unfavourable circumstances in their situation reconciled them to it in ancient times. These times and circumstances are now, however, no more, and the practices to which they gave rise ought to perish with them.

5. The common Hebridian grey oats should gradually be banished from the better islands; and the cultivation of rye, at least on the present plan, ought to be abandoned at once. These might fairly be made conditions in all leases granted on the large estates.

6. We have mentioned in Chap. vii. *passim*, the sorts of white crops which ought to replace the kinds at present in general possession of the Western Islands. Proprietors and gentlemen farmers cannot pay too much attention to the subject. The smaller tenants ought to be incited and encouraged to import flax-seed, and never to sow on their own farms the seed saved from their own crops. Let them exchange it for seed from the nearest island or parish, or even from some other farm, growing on a different soil, if they cannot procure foreign seed, rather than destroy their seed and waste their land by forcing an unnatural crop.

7. The common tenants should be every where prompted to pull their flax and cut down their hay *before the seeds ripen*. Indeed, they have every where a natural tendency to procrastination, or, as they are pleased to call it, *trusting to providence*, imagining that their crops will always improve as long as they stand upright on the field; and never once thinking of the damage which is done to the ground, or the exhausted state to which absurd delays reduce their lands. The consequences, however frequently observed and fatally experienced, seldom teach them foresight or better management. They must, therefore, be impelled, and almost forced, to obey the old adage, and "make hay while the sun shines."

8. The cultivation of hemp and flax should be promoted in every possible way, (vid. p. 281, &c.)

GREEN CROPS.

1. Green crops ought to be the staple crops of the Hebrides, as the soil, climate, and general state of that region, are peculiarly calculated for them.

2. Every farmer ought to have some land annually under turnips, in order to keep his cattle in good order, and to prepare manure during the months of December, January, and February, as well as to save his corn and potatoe stocks for the great demands upon them in March and April. For this purpose, such farmer should have, contiguous to his barn and byre, an inclosure of from 2 to 12 or 14 acres, according to his circumstances, part of which he ought always to have in turnips, and the rest alternately under sown grasses and white crops.

3. In order to manage green crops with economy and advantage, the horse-hoeing method of cleaning them ought to be generally introduced. For this purpose, farmers in the Hebrides should apply to the best plough-wrights within their reach for the most approved ploughs and other implements; and landlords should present their tenants with a certain number gra-

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tis of such ploughs in the first instance, to be distributed by the factors or chamberlains on the different estates; and the circumstances attending the use of them should be annually inquired into at the time of paying the rents.

4. For the extension of green crops, as well as the gradual improvement of waste lands, certain rewards should be annexed to the planting of turnips or potatoes in wild lands of every description, producing a certain quantity per acre, or certain considerable returns for the seed sown. The regulations adopted, with regard to this matter, must be as plain and intelligible, and the rewards as promptly granted as possible. It is a matter of very great consequence, and ought to enter into the plan of every proprietor who consults his own interest as well as the essential improvement and welfare of his tenants.

5. In the northern and remoter isles, want of shelter is perhaps the greatest disadvantage under which the agriculture of the district labours. Broom and whins, or furze, would not only prove highly serviceable in protecting sheep and cattle from the fury of the storms, but also in gradually helping to inclose and shelter the most exposed fields. They would facilitate the rearing of wood, check sand-drift, and consolidate and strengthen earthen dykes and fences in places where stones cannot be easily procured; in short, they would prove a most precious acquisition to those islands. They grow luxuriantly in Bute, Islay, and Arran, and would probably thrive also in Skye and the Long Island. All landlords and gentlemen farmers ought,

therefore, to import and sow considerable quantities of their seeds.

GRASS.

1. To increase the quantity and to improve the quality of the native grasses, as well as to raise such other sorts as may be found by experience suitable to the climate and soil of those islands, ought to be a principal object of farming with all Hebridian possessors of land. Sown grasses are much earlier and more productive than the natural herbage, and ought therefore to be more generally introduced, though at considerable expence, than they have hitherto been, even in the more improved isles. The degree of perfection which agriculture attains in any district may indeed be ascertained by the proportion of ground which occurs under the green crop and grass management, with more accuracy than by any other criterion with which it can be compared. The islands in question do not raise one twentieth part of the hay which they might possess annually by paying due attention to the cultivation of grass crops; and, accordingly, they suffer most severely every winter and spring from the want of them. It would perhaps be proper, at least on the larger farms, to insert a stipulation in every new lease, obliging the
tenant

tenant to sow a certain quantity of grass seeds annually, and to produce, at the period of settling his accounts, the receipt for the payment of such seed, or a certificate that it was sown in land suitably prepared for it. The quantity must, indeed, depend upon circumstances, and also upon the seasons themselves, but in the more fertile and extensive islands, it is probable that some plan of this description, mildly and judiciously enforced, would produce the best effects.

2. The quantity of natural hay might also be greatly increased and improved by draining, irrigating, and by top-dressing the meadows, according to their different situations and circumstances. Nearly 2000 acres of excellent meadow-hay might be annually cut in Uist, were the lands fit for that crop adequately drained, and protected from the casual overflowings of rivers and inroads of the tides.

3. Much hay and straw might be saved by substituting rushes, sprets, fern, and heather in their place, as litter for such horses and cattle as are housed in winter. This, although an important part of rural economy, is almost totally overlooked in the Hebrides.

4. Great attention should be paid to the nature and properties of the different herbage previous to the farmer's fixing upon what parts he means to use as winter, and what parts as summer, pasture. Some kinds of herbage perish entirely in winter, while others remain vigorous, green, and nutritious during that period, but become useless and insipid in summer. His experience and personal observation must be his guides in this matter. He must use his summer pastures com-

pletely, and that too by occasionally shifting his stock from field to field, so as to prevent any part of the grass from running wild and being lost to his cattle. He ought also to study shelter and dryness of bottom for his winter pastures; as these prove equally essential with food itself to his live-stock during the rains and tempests of winter.

5. When light land is to be laid down for pasture, and intended to continue so for a succession of years, the farmer should sow 10 or 12 pounds of white and yellow clover along with his other grasses. He may also sow such seeds as he can procure of the soft vernal grass, the tufted vetch, the purple mountain grass, and all others which he finds to thrive in similar soils.

6. Women, and other persons who can be hired at moderate wages, ought to be employed in destroying thistles, and in pulling up and burning poisonous or noxious plants and weeds, before they ripen their seeds, or spread their shoots in spring and summer. One thistle destroyed early saves the farm the nourishment of twenty thousand thistles which may grow from its seeds. These seeds are carried far and wide by the winds, sow themselves, and prove nurseries for future thistle forests. The same holds true of many other weeds and noxious plants. The advantages resulting from the labour of a few women and boys in one week upon a farm overgrown with weeds and thistles, are astonishing, and almost incalculable. Let the Hebridian farmer but once make the trial, and it is probable no farther advices will be necessary to induce him to continue so salutary a practice.

7. Sand-drift being so extensively pernicious on some islands as to destroy one half of their arable land, as well as to render a considerable portion of the rest precarious and uncertain, and also to damage the houses, roads, and cattle of the inhabitants, the proprietors of such lands ought to furnish their tenants with proper seeds for checking it. These are, besides broom and whins, (just recommended under the head of green crops), the following; all of which are encouraged by the governments and the landed proprietors of Denmark and Holland: viz. *Arundo arenaria*, or sea bent;—*elymus arenarius*, sea lyme-grass;—*phalaris arenaria*, sea canary-grass;—*chenopodium maritimum*, white glass-wort;—*salsola kali*, prickly glass-wort;—*atriplex laciniata*, sea orache;—*atriplex hastata*, spear-leaved orache;—*spergula arvensis*, spurrey;—*galium verum*, cheese renning, in Gâlic, rugh;—*pulmonaria maritima*, sea-bugloss;—*convulvulus soldanella*, Scottish sea bind-weed;—*glaux maritima*, saltwort;—*eryngium maritimum*, sea eringo;—*ligusticum Scoticum*, Scottish sea parsley;—*statice armeria*, thrift;—*rumex maritimus*, golden dock;—*polygonum maritimum*, sea knot-grass;—*arenaria peploides*, sea chickweed;—*cochlearia officinalis*, scurvy-grass;—*sisymbrium monense*, manks rocket;—*arenosum*, sand-rocket;—*ononis repens*, creeping rest-harrow;—*artemisia maritima*, sea wormwood;—*anthemis maritima*, sea camomile;—*aira aquatica*, water hair-grass; *poa flagellifera*, sea meadow-grass;—*festu-ia Gallovidiensis*, Galloway fescue;—*triticum caninum*, dog's grass;—*triticum junceum*, sea wheat-grass;—*maritimum*, sea spiked grass;—*carex arenaria*, sea carex;—*plantago maritima*, sea plantain;—*carnosa*, succulent

culent plantain ;—*beta vulgaris*, sea beet ;—*cucubalus maritimus*, sea campion ;—*raphanus maritimus*, sea radish ;—*nardus stricta*, common bent ;—*aira coerulea*, fly bent.

These and other annual maritime plants may be used in covering the surface of blowing sand ; though the perennial plants, with strong creeping roots, are much fitter for the purpose. Of all the annual plants, spurrey is the most valuable, and has been long used with advantage in Holland. It is of such a quick growth as to be capable of covering the surface of a field of blowing sand in the course of a few weeks. It is fed upon by cattle ; but if intended to fix blowing sands, it should rather be permitted to ripen and cast its numerous seeds, unmolested by any sort of live stock, until it completely secures and consolidates the face of the field. The common tare and buckwheat are also sown on such sands with considerable advantage.

Blowing sand is always most dangerous when it comes to form eminences, or sand hills, which it frequently does in the Western Isles, and in many other countries, when exposed to the storms of a sea shore. These hills being easily set in motion by the wind, it is difficult to stop the sands on their sides and summits. It is a great point gained if they can be kept from blowing to any considerable depth. This can only be done by deep rooted and strong plants. The sea bent and the sea lyme-grass are of this kind ; but there are different sorts of willows which would be much more effectual, and especially two which grow naturally in blowing sand. These are the *salix argentea*, silver willow, common upon the sandy shores of Forfarshire and East Lothian ;
and

and the *salix Hebridiana*, which is found on many of the Hebrides, especially Bute and Arran, and which was supposed by Dr Afzelius of Upsala to be the willow discovered by Linnæus on the sandy shores of Scania in Sweden, and mentioned in his *Iter Soanicum*, but which he has omitted to insert among his *species plantarum*. These willows not only thrive in blowing sands, but also spread and take root on their surface. Cuttings of such willows, plunged, early in spring, to the depth of two or three feet in the sand hills, would be the most effectual means to prevent the sand from being carried off to any considerable depth. Where these sorts cannot be obtained, the other willows which grow in watery places, and take root on the surface, may be successfully tried. When blowing sand lies deep, it is moist at bottom, and a good soil for almost every species of the willow tribe; for although dry at top, and apparently destitute of the requisite moisture for this plant, such ground is, at some depth from the surface, compact and moist, and that not so much from the rains, as from the percolation of the water upwards through the sandy soil. The great importance of this subject is a sufficient reason for being thus particular upon it. The estates of Lord Seaforth in Lewis, of Lord Macdonald in North Uist, of Mr Home of Harris, of Mr Macdonald of Clanranald in South Uist, of Mr Macneill of Barray, Mr Maclean of Coll, and of several other proprietors in the Hebrides, might gain at least 25,000 acres of ground by the improvement now recommended.

8. Moor and heather burning should only be carried on in places so distant from human habitations as to make

make it impossible for the natives to carry home heather for useful purposes from them. This is the case in the greatest part of Lewis, Harris, North Uist, and Rum, and in many districts in the other islands of the first magnitude. The process, however, should be cautiously entered upon, and not extended too far.

LIVE STOCK.

1. Both landlords and farmers should consult competent judges in order to fix upon the sorts, numbers, and proportions of live stock which they ought to allot to their farms. The pernicious, and too common practice of overstocking the land should be carefully avoided; and every encouragement should be afforded to the tenant for improving the breed and management of his stock.

2. The size of cattle and horses ought not to be forced all at once beyond the abilities of the smaller tenants, and the powers of the pasture to maintain them. Proprietors and gentlemen farmers must commence the introduction of enlarged and improved breeds. They should also gradually rear flocks of Cheviot and Spanish sheep upon their pastures, before they recommend them to their tenants and dependents.

3. The farmer should discriminate between the pastures fit for different sorts of live stock, at the various seasons of the year, and act systematically and rationally in consequence of such discrimination. It is preposterous to keep cows, horses, and sheep on the same pastures, in every sort of weather all the year round : and yet we find it often done on many of the Western Isles.

4. Attention ought to be paid to the difference between breeding and fattening pastures, and each kind should be applied to its proper use.

5. The best Hebridian and West Highland breeds of black cattle should be carefully reared and propagated, without adulteration from foreign breeds, through all the islands.

6. The use of hay tea should become general in rearing calves.

7. Care should be taken not to stint young cattle of provender at an early period ; but, on the contrary, to rear them up vigorously from the day of their birth.

8. The true Highland and Hebridian *gearran* breed of horses should be retained, and improved as much as possible by selecting brood mares and stallions of the handsomest forms and most serviceable sizes. By such selections, horses fit for the plough, cart, creel-carriage, and saddle, may be produced in sufficient numbers through all the Hebrides. The islands of Islay, Mull, Arran, Lewis, and Skye, might supply the demands of all the rest, and realize considerable sums annually by that branch of economy.

9. The number of horses at present kept in Arran, Tyree, and the Long Island, should be reduced to one-third.

10. The breed of sheep ought to be improved, and more attention paid than has hitherto been done to the fineness of the fleece, and to stapling and sorting the different kinds of wool. The Cheviot and the Spanish breeds might be introduced into the better grazing districts, especially such as are not frequently visited by violent storms and severe frosts. The aboriginal native breed ought to be gradually extirpated, and replaced either by the breeds just mentioned, or by the black-faced or Tweeddale breed.

11. Sheep farms ought to have some meadow lands annexed to them for supplying hay for winter use.

12. The preparing of mutton hams for exportation ought to be made a branch of Hebridian industry and improvement, in like manner as is done in Orkney, Shetland, and the Danish and Norwegian islands.

13. Rabbit warrens might be established on some of the dry islets near the large Hebrides, with great advantage.

14. Hogs and poultry of all kinds might be greatly increased in numbers, and improved in quality. The breed of Chinese pigs, now common in many parts of Scotland, should supplant the Hebridian and Irish coarse and ravenous species which is at present in possession of most of the isles.

15. Bees might be used with considerable profit in many parts of the larger islands, where the finest heather and various sorts of odoriferous plants abound in the greatest luxuriance.

16. Such lakes as are destitute of fish might be replenished with pike and other useful fishes, which are not so delicate in constitution as the common trout,
and

and which are proof against the assaults of the insidious and voracious eel. Prejudices against the last mentioned fish will gradually vanish, but in the meantime the catching and exporting of them ought to be encouraged.

WOODS AND PLANTATIONS.

1. Plantations must be restricted to such ground as cannot with advantage be tilled by the plough, or used for producing artificial crops. To this rule there ought to be no exception in ordinary cases; but the edges of sloping and elevated ground, as well as the fields which lie towards the stormiest quarters relative to dwelling-houses or villages, may be planted for the valuable purposes of warmth and shelter to the rest of the district. Gentlemen and proprietors will of course sacrifice in many instances various portions of their best lands to the beauty and ornament of their seats; and surely there is no part of Britain where such sacrifices are more loudly demanded than the bleak and woodless Hebrides. There is indeed very little danger of any Hebridian's exceeding in the department of agriculture now alluded to; and it were to be wished that twenty times the quantity of ground now occupied by woods and plantations had been allotted to them half a century ago.

2. Every considerable proprietor should have a nursery of plants, most of which ought to be raised from the seed in the district itself. This would give plantations a better chance of thriving than when the plants used are imported from distant parts, or different and better soils and climates, and perhaps nearly dead before they are placed in the ground. Many disappointments in Hebridian plantations have taken their origin from this source.

3. Coppice woods, especially those of Arran, Bute, Islay, Jura, Mull, Skye, and a few of the smaller isles, ought to be well inclosed, their vacant intervals planted with forest trees of valuable kinds, and the strictest orders given and enforced respecting the judicious management of them. Nothing is more wanting in the isles above mentioned than attention to this great and important improvement.

4. When coppice woods are cut, a sufficient number of standards ought to be reserved, even for the purposes of shelter, and abstracting altogether from the consideration of the intrinsic value of such standards. Attention must also be paid to the natural productions of the soil, and to the sorts of trees which spring up spontaneously in it.

5. The judicious Hebridian planter of trees will begin with quick growing hardy plants adapted to a wet soil, and which are not so easily overset or torn up by the winds as some of the more valuable kinds; such, for instance, as the following sort of willows, *salix viminalis*, *salix alba*, *phloragnum*, *malifolia*, *amerina*, *polygamia*, *helix*, &c. which can easily be procured from the nurseries of Edinburgh and Glasgow; the common

rowan

rowan tree, the birch, plane, poplar, larch, fir, &c. and gradually introduce among these the nobler plants, oak, ash, elm, beech, &c. Vide Chap. X. Sect. 3d. page 328, &c.

6. The destroying of wood in every shape, or even inattention to the preservation of it, ought to be severely punished by persons of influence in this country. No transgression indeed, short of robbery and murder, is attended with more pernicious consequences to a country so destitute of wood ; and every friend and benefactor of it, must not hesitate to act with the utmost rigour in a case of such pressing necessity.

7. All trees should be barked before felling, if at all convenient ; but if not, they should be stript of the bark as speedily after it as is consistent with the owner's other avocations.

GENERAL MEASURES, OR POLICE.

1. Mountainous tracts, marshes, lakes, and every sort of surface, however trifling its value at present, ought to be divided and appropriated, either by compromise or by law : and written documents should be exchanged upon the subject, to prevent future law suits and litigation.

2. The greatest attention ought to be paid to the formation and reparation of roads: This is a matter of

the very first importance, and merits the serious consideration of every man of sense in the Hebrides.

3. Regular passage or packet boats should be established at the best central harbours of the principal isles, and the number of post-offices should be greatly increased. In order to accomplish these objects, the Hebridian proprietors should have an annual meeting in Edinburgh, and settle matters so with the general post-office, that they themselves and their estates may reap the same benefit with other distant districts of the kingdom from that admirable establishment.

4. Fairs and weekly or monthly markets would be of vast service on the large islands, and would greatly promote the industry and wealth of the people. Where such markets are held, the proprietors ought to possess store houses for wool, fish, meal, salt, and such other bulky commodities as the natives may find inconvenient and troublesome to carry home with them at once if purchased, or back if remaining unsold from the want of a brisk demand. These fairs and markets would attract merchants and draw money from distant parts, and conduce to bring prices to a steady level, as well as to prevent the distresses which are frequently more fatal here than in the rest of Scotland, arising from scarcity of food in bad seasons, or from great accidental and temporary fluctuations in the prices of black cattle.

5. Villages should be encouraged in proper situations and under the circumstances already enumerated at full length in this report. They may contain from 10 to 50 houses; but should not, as in Tobermorey, exceed
the

the resources afforded by the immediate neighbourhood to support them in comfort.

6. The present embarrassing and intricate variety of weights and measures ought to be remedied by introducing an uniformity of some kind or other, no matter whether English, Scots, or Irish.

7. Every man of influence in the Hebrides ought to do all in his power to promote the education of youth, and to connect religion and morals with industrious habits. For this purpose, the parochial and charity schools should be regularly examined, and the teachers strictly looked after, and punished or encouraged according to their merits. The schools on many of the islands are in a state of shameful neglect, and the consequences are grievously felt by the best disposed part of the inhabitants. All country schools might be made seminaries of agricultural and mechanical industry as well as of education. The wives of schoolmasters and catechists should keep schools as spinning and sewing mistresses.

8. All possible exertions should be made to destroy foxes, eagles, ravens, and birds of prey, and the dog-tax should be rigorously levied in order to put an end to the absurd custom among the common Hebridians of keeping a number of useless curs about their families.

9. Proper means should be used by the proprietors to teach their tenants a judicious mode of thatching their dwelling and office houses; and the use of straw should be given up where any substitute can easily be found for it. The best common substitutes in the absence of slates and tiles, are heather, fern, rushes, sprett,

bulrushes, reeds, and the root commonly called *taighin* in the Gallic language. All these are infinitely more durable and fit for the purpose than straw.

10. Windmills should be erected by the proprietors on such islands, and in such districts, as are frequently destitute of running water in dry seasons;—such as the isles of Tyree, Coll, Eigg, Benbicula, Bute, and several districts of Uist, Skye, and the larger islands; and lint mills and fulling mills should be built on all the large islands, in order to promote the cultivation of flax, and to facilitate the operations of the natives in manufacturing woollen cloths for their own use. This would also give employment to the women—a matter of great consequence.

11. The separate exercise of the mechanical employments should be promoted as much as possible. The want of artizans and tradesmen is a prodigious obstacle to the advancement of those isles, and cannot be removed without strenuous efforts, and substantial sacrifices on the part of the landed proprietors.

12. Quarries should be opened up and wrought by order of the great proprietors, as has lately been done in Islay and Arran, &c.—and the minerals, such as marble, lime-stone, iron-stone, slates, &c. with which the country abounds, should be turned to account in itself as well as exported as objects of trade.

13. The proprietors of such isles as possess abundance of good peat-mosses, in the immediate vicinity of safe harbours, and near places destitute of fuel, ought to encourage their tenants to prepare peats for sale and exportation; such, for instance, as Lord Macdonald, from his admirable station of Loch-Maddy in North-

North Uist, and Kyle in Skye; Lord Seaforth, from Stornoway and other parts of Lewis; and the proprietors of Mull, Jura, and Islay, from different points of those islands.

14. There should be, at least, four agricultural societies established in the Hebrides, viz.—one at Bowmore, in Islay, as at present; one at Tobermory, in Mull; one at Portree, in Skye; and one at Loeh-Maddy, in North Uist. These might meet either once or twice a-year; and greatly conduce to the agricultural improvement of the isles.

15. There should be a prison in every island which contains a population of 3000 souls and upwards; and suitable officers for the purposes of good order and police.

16. Emigrations to America should not be altogether prevented, but they ought not to be encouraged. The generality of Hebridian landlords have indeed great merit in this respect; and by no means deserve the reproach which some ignorant strangers cast upon them, of banishing their people to make room for sheep, and in order to obtain a rise of rents. This is a subject so thread-bare and hackneyed that it does not deserve any further mention than merely to refer to the population tables of the different periods since 1750, in order to be completely convinced of the fallacy of the general opinions upon it.

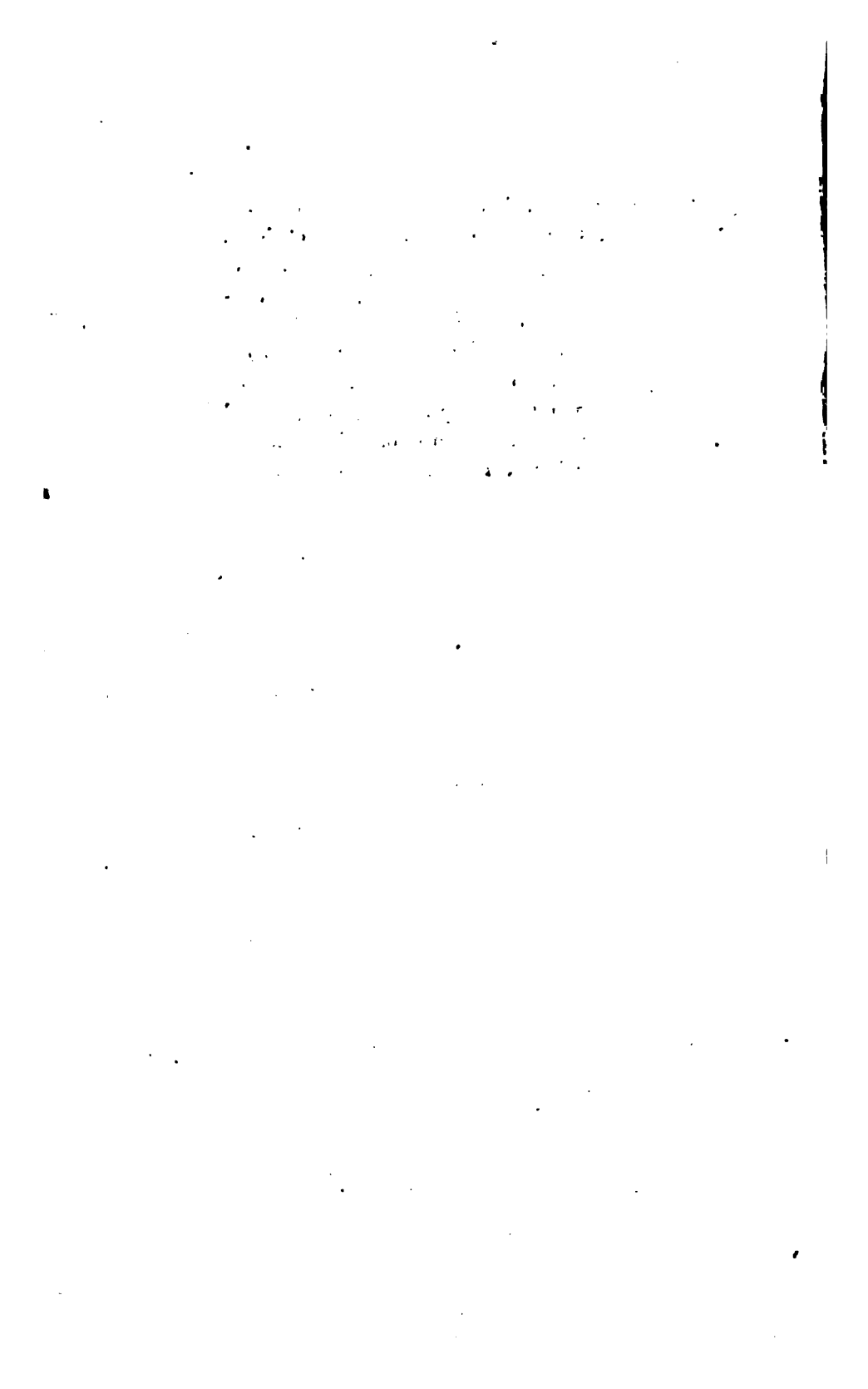
17. The clergy of both persuasions, Presbyterian and Roman Catholic, should promote toleration and liberality, in the most extended sense of the words, among their people. The number of Roman Catholics is not very considerable, being chiefly confined to the parishes

of South Uist, Barra, and the small isles, and not exceeding 6000 souls. They are as industrious, orderly, and inoffensive, as their protestant neighbours; and their priests, generally speaking, are worthy men, and valuable members of society. The great obstacle to the improvement of their followers, is the total want of education, there being no Roman Catholic schools in the country, and consequently no means of instructing young persons in the principles of their religion. To their credit, indeed, it must be said of the parents, as well as of the priests, that they by no means seem averse from their childrens attending the Protestant schools; but there is, unfortunately, such a scarcity of schools of any description, in the parishes just mentioned, that few even of the richer tenants' children have access to education, while that of the poorer sort is entirely out of the question.

18. The Hebrides should undergo a thorough reform in their religious management, and receive at least 20 new parochial establishments, in addition to their present churches. A glance at the map prefixed to this work will convince any man of the necessity of erecting new parishes. In the whole district of Uist and Barra for instance, (containing about 6,500 Protestants, and 4,500 Roman Catholics, or 11,000 souls, scattered over a country 80 miles long, and from 2 to eighteen miles broad,) there are but *three* parishes, and only *one* parochial church. That *one, single church*, too, is in a corner of North Uist, close by the sea shore, and at a distance of 12 miles from the district of Saund, the most populous in the parish. It is unnecessary to mention other instances of a similar nature; suffice it to state,

state, that the Hebrides are more extensive than Northumberland and Durham united, and yet have only 31 parishes, for the purposes of religious instruction, and the administration of sacred ordinances.

19. *Proprietors should have a farm in every island of any considerable extent, under their own management, in order to show their tenants an example of skilful husbandry, and to lead the way in all agricultural improvements.*—It is idle to talk, as many persons are pleased to do, against the expence and trouble incurred by such proprietors, in carrying on the business of their farms; or to draw comparisons between what they can produce from the lands occupied by them, and what ordinary tenants are able to achieve by a more economical mode of procedure. Landlords, it is well known, must lay their account with making considerable sacrifices; but these are well bestowed, considering the ameliorations which usually follow them. The question is not, whether the proprietor gains or loses by his farm itself; or whether he might not receive a considerable increase of rent, by letting that farm to a person who would manage it according to the old, or any other, plan. No such question is necessary; nor need any man bring it forward with an air of sagacity, as something valuable, a discovery which the landlords in question have not made long ago:—No. It must always be remembered, that the situation of the Hebrides is different from that of the richer and more central districts of the kingdom; that the tenants will do nothing new, unless stimulated by the order, or encouraged by the example, of the proprietors;—that experiments are extremely difficult and expensive in a region where artizans and trades-



APPENDIX.

THE number of the inhabited Hebrides is 87; but, in a report of this kind, we must attend only to such islands as deserve notice on account either of their population and value, or of some peculiarities in their management, or in the manners and customs of their inhabitants. It is now, therefore, proposed to add to the General Agricultural Survey of the Hebrides a short account of some of the most remarkable isles, beginning with the southern, and ending with the northern, but leaving Bute and Arran for a separate work, as they constitute a county by themselves. The Hebrides now to be described are,—1. Gigha,—2. Islay,—3. Collonsay and Oronsay,—4. Jura,—5. Scarba,—6. Lunga,—7. Luing,—8. Shuma,—9. Saöl and Eisdale,—10. Kerreray,—11. Mull,—12. Ulva and Gometra,—13. Icolmkill,—14. Staffa,—15. Tyree,—16. Coll,—17. Lismore,

Lismore,—18. Monk or Muck,—19. Eigg,—20. Rum,
21. Cannay,—22. Skye, with Raasay and Ronay,—
23. Barray, Uists, and Benbecula,—24. Harris and
Lewis,—25. St Kilda.

1.—GIGHA.

THE following is Dean Monroe's account of this island, as he found it in 1540-9 :—"Gigay. At the heid of the Iyle Caray, there fra northeist, lyes ane iyle callit Gigay, six myle lange, ane myle and an half myle breidth, with an paroche kirke: guid fertile mainland; it has therein abundance of eldders. The auld Thane of Gigay should be laird of the same, callit McNeill of Gigay; and now it is possessed by the Clannadonald. Streitest at the shore of Kintyre, from south-west to north-eist in length, four myle of sea from Kintyre." About 150 years after Dean Monroe visited Gigha, Mr Martin wrote his account of the Hebrides; and, among the rest, of Gigha. It is surprising that he had not seen the Dean's description of these isles, nor even attended to Buchanan's, which was, in general, a translation merely of part of Monroe's description. The learned and accurate Dean makes Gigha six miles long, which is very nearly its real length; and Martin makes it only four: in like manner, the former makes the
breadth

breadth a mile and a half, the latter only one mile. It is singular that Dean Monroe gives his measurements pretty accurately in English statute miles, as they are at present; and Martin gives his sometimes in English, and sometimes in Scotch miles. Gigha is very nearly $6\frac{1}{2}$ miles long; and, at an average, a mile and a half broad. Its valued rent is L. 189. 15s. 6d. Its superficial contents are about 5000 Scotch acres, of which 1500 are arable. The soil is in general a reddish or brown mould, inclining to clay or gravel, not unfertile, but requiring good management and much draining. The common crops are barley, oats, potatoes, flax, and, of late, turnips, pease, beans, and sown grasses, in considerable quantities. The proprietor Mr Macneill, and his enlightened and active son, who takes almost the whole management of the island, have of late years greatly improved Gigha in every respect. They have made an excellent road, at their own expence, from one extremity of it to the other; and thereby enabled the tenants to avail themselves of the use of carts, and to carry manures, and every thing necessary for their farms, from the harbour of Gigahm and such parts of the island as may chance to afford them. Every tenant possesses his own specified quantity of land, partly pasture and partly arable, which he is bound to inclose, drain, and gradually improve, on certain reasonable conditions. Mr Macneill employs cottars and day-labourers in building stone dykes, and constructing drains and roads, all the year round. His labourers receive from 1s. 2d. to 1s. 6d. per day. He had in summer 1808 five of them constantly employed. His cottars are now become excellent dykers, and have finished a
piece

piece of work, to the eastward of the house of Gigha, in a capital style. The stone is granitell, extremely hard, and difficult to work, and yet these Hebrideans (so often accused of incurable laziness) have built many thousand yards of dyke with that material; at the reasonable rate of 9s. 6d. per 6½-yards running measure. Women are employed occasionally at the rate of from 8d. to 1s. 2d. a-day; and young boys and girls at from 6d. to 1s. This is an admirable part of Mr Macneill's system, and does more good, by accustoming his tenants and their families early to industrious habits, than if he made them a present of the rents of their lands.

The persons employed in cutting drains are supplied with the necessary implements, tools and gunpowder, by Mr Macneill, and are paid either 1s. 6d. per diem, or at the rate of from 3d. to 4½d. per solid yard; according to circumstances and the option of the labourers. They generally prefer being paid by the piece, and exhibit astonishing powers of industrious exertion.

The consequences of the system followed out by the very respectable proprietor and his son are manifest in the external appearance of the island and of its inhabitants. These convey to a stranger the fairest encomium of the plan alluded to, and render any inquiries concerning the treatment of the natives superfluous. But to such inquiries, if made, the answer would be uniformly favourable; and this little island exhibits at once an excellent model of Hebridian improvements in agriculture, and of the judgment, humanity, and sound sense of the proprietor. The introduction of green crops, and of the improved modern husbandry, by the laird, has opened the eyes of the tenants to the advantages

pages

tages which may be derived from them. The mode of tilling the ground by the improved plough, and with two horses without a driver, is taught them by Mr Macneill's lowland ploughmen, whom he employs all the year in his regular agricultural works. The result it is really gratifying to perceive over the whole island; and it would be well for many of the northern Hebrides if their tenants made a voyage to Gigha on purpose to examine it. The farm in the landlord's possession is an excellent example to all the rest.

The population of Gigha and Cara is 850 souls. The school, as appears from a list attested by the minister and schoolmaster in summer 1808, was attended by 52 boys and 24 girls between the ages of 7 and 15, or in all 76, the greatest number, in proportion to the population of any parish in the Hebrides. The girls were taught sewing at the same time by the schoolmaster's wife. There are 26 boats, each manned by from 4 to 6 hands, which occasionally fish on the cod and ling banks north and by west of the island. They are reckoned among the ablest fishermen in the Hebrides, and earn considerable sums of money by that lucrative branch of industry. They sold their ling-fish this season at L.30. per ton; and their success at the herring fishery in Loch-fine has also been very encouraging. Some individuals cleared 12 guineas in 3 months. The principal articles of export from Gigha are grain, cattle, fish, kelp, a little linen yarn, and considerable quantities of potatoes. It imports oat-meal, but not to any great extent. The island always exports more provisions, (fish included,) than it imports, and may be considered as among the most independent of the Hebrides in that point

point of view. The quantity of potatoes exported has amounted, at an average of the last 6 years, to 1,600 barrels, or 400 Kintyre bolls. This proves the astonishing productiveness of the island in that article, considering the population which it has to maintain: for, taking the resident population, (exclusive of persons who emigrate for some months occasionally, for the purposes of fishing, or of serving as sailors, or day-labourers,) at 700 souls, the island affords only 7 acres for each person; and supposing the number of cattle and horses to be equal to that of human beings, and to require, at an average, 8 acres for the maintenance of each individual, the population has only 4 acres for every inhabitant. These 4 acres, however, are partly pasture, partly arable ground; the former being to the latter as 50 to 15, or 10 to 3; and, consequently, each native having only $1\frac{1}{3}$ acre of arable land for his sustenance. Of this space, we may suppose, as is the case over most of the Hebrides, *one-fifth* to be under a potatoe crop; i. e. one quarter of an acre nearly for each individual, supplies him with potatoes all the year round, and furnishes a surplus for exportation. That surplus amounts to $2\frac{1}{2}$ barrels, or more than half a Kintyre boll, over and above the potatoe consumpt of an individual for each quarter of an acre under that crop in Gigha? What an astonishing advantage does this esculent confer on the island, and what an encouragement to the extensive cultivation of so precious a plant!—It is not easy to determine the quantity of barley exported from Gigha annually, as some is exported in grain, a little in meal, and some in the condition of whiskey. In spite of all that an enlightened landlord can do, illicit distillation

distillation will be practised in the Hebrides, as long as the present absurd regulations concerning the Scotch distilleries remain in force. This island imports groceries, hard-ware, boat-tackling, tar, &c. and various articles of dress, to the amount of about £500 yearly; but the value of its exports greatly overbalances both its rents and imports taken together; and the natives, as has been already mentioned in this report, advance very perceptibly, year by year, in comfort and wealth. There are from 25 to 30 tons of kelp manufactured here annually at an average, although the tide seldom rises more than from 4 to 5 feet, and neap tides rarely exceed 3 feet. There is no other manufacture of any consequence. The natives, indeed, make some coarse woollen cloths, as well as linen, for their own use, but they export none. They are, upon the whole, a very innocent, orderly, and industrious set of tenantry, and stand among the foremost ranks of Hebridians, in point of agricultural and economical advancement. There are no minerals of consequence here. Some limestone, of no very good quality, appears to run south and north to the eastward of Gigha-house; but as limestone of the very best kind may be easily imported from an island belonging to the proprietor near the coast of Knapdale, the limestone of Gigha is perhaps scarcely worth the trouble and expence of working. The fine sand which composes the beach, and runs out to an indefinite length into the sea, at a bay south-east of Gigha-house, has been used successfully in the glass manufacture; but the demand of late years has rather slackened. It is composed of granite and quartz, the last mentioned of which abounds in Gigha, in brittle rocks and regular veins; of

the purest white colour imaginable. There are appearances of iron ore, and considerable quantities of bog-ore, to the southward of the laird's house,—but no mines have ever been wrought there. It is probable that the island once abounded in wood, (for trunks of trees are found in the mosses,) and that trees may yet be made to thrive.* The adders or snakes, mentioned by Dean Monroe, have long ago disappeared; none of the oldest inhabitants living recollect any tradition about such reptiles, nor is there any venomous creature now on the island. Seals and otters are seen about the shores, but they are growing less familiar in proportion as the population increases, and will probably soon be seen no more. The common fishes and birds of the Western Isles are found here, but no species peculiar to the island. The most elevated spot in Gigha, the summit of a granite hill near the north end of it, is about 500 feet above the sea level; but the arable land is, for the most part, only from 10 to 150 feet above it. This circumstance, joined to the good example and energy of an excellent landlord, makes the crops in general early, plentiful, and secure, and the people, of course, comfortable and happy.

The island yields a curious contrast to the coasts of Kintyre and of Jura, between which it stands. On neither of these are there any improvements of consequence carried on; and although more favourably situated with regard to shelter, and perhaps also more fertile

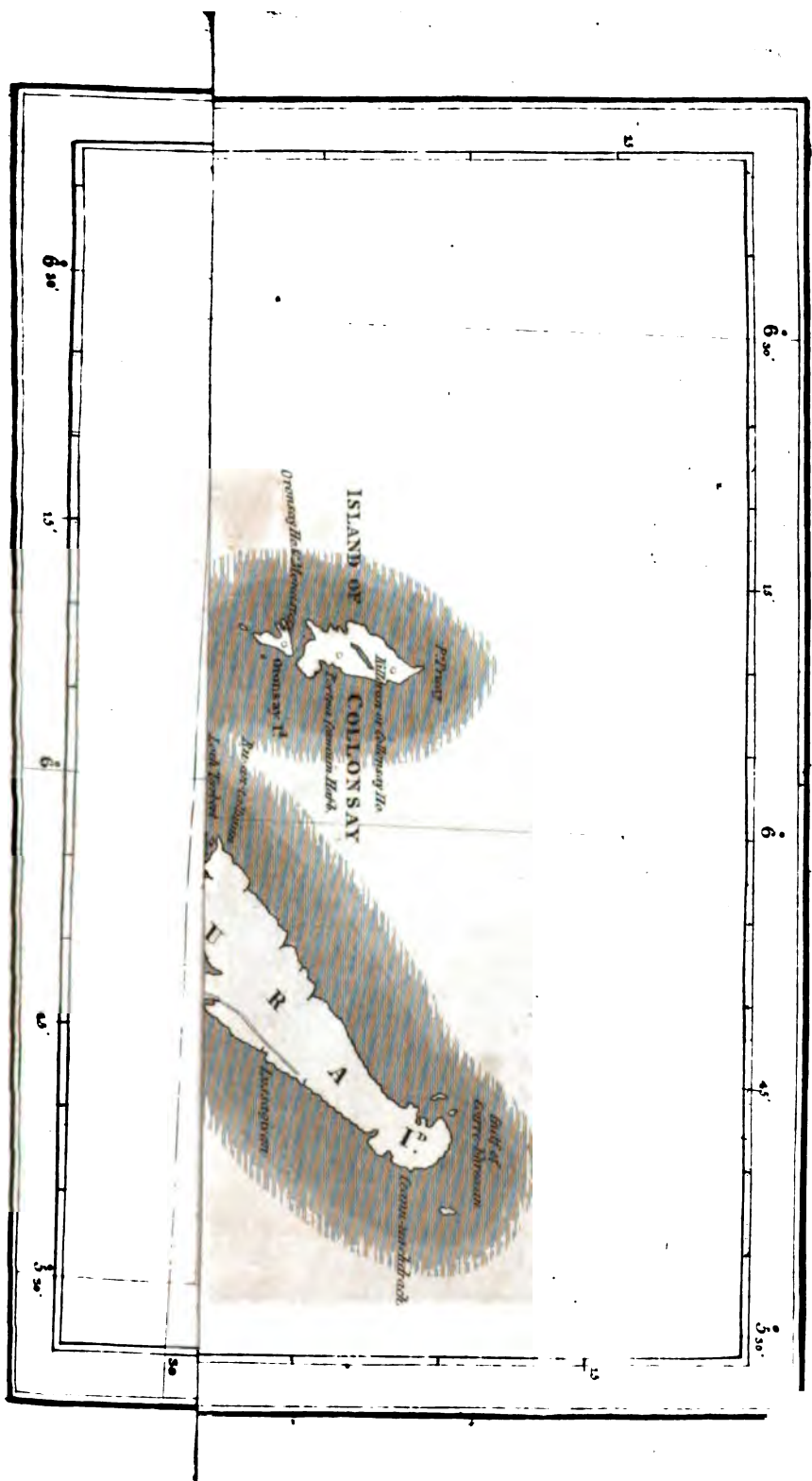
* The present proprietor is indeed making very promising experiments.

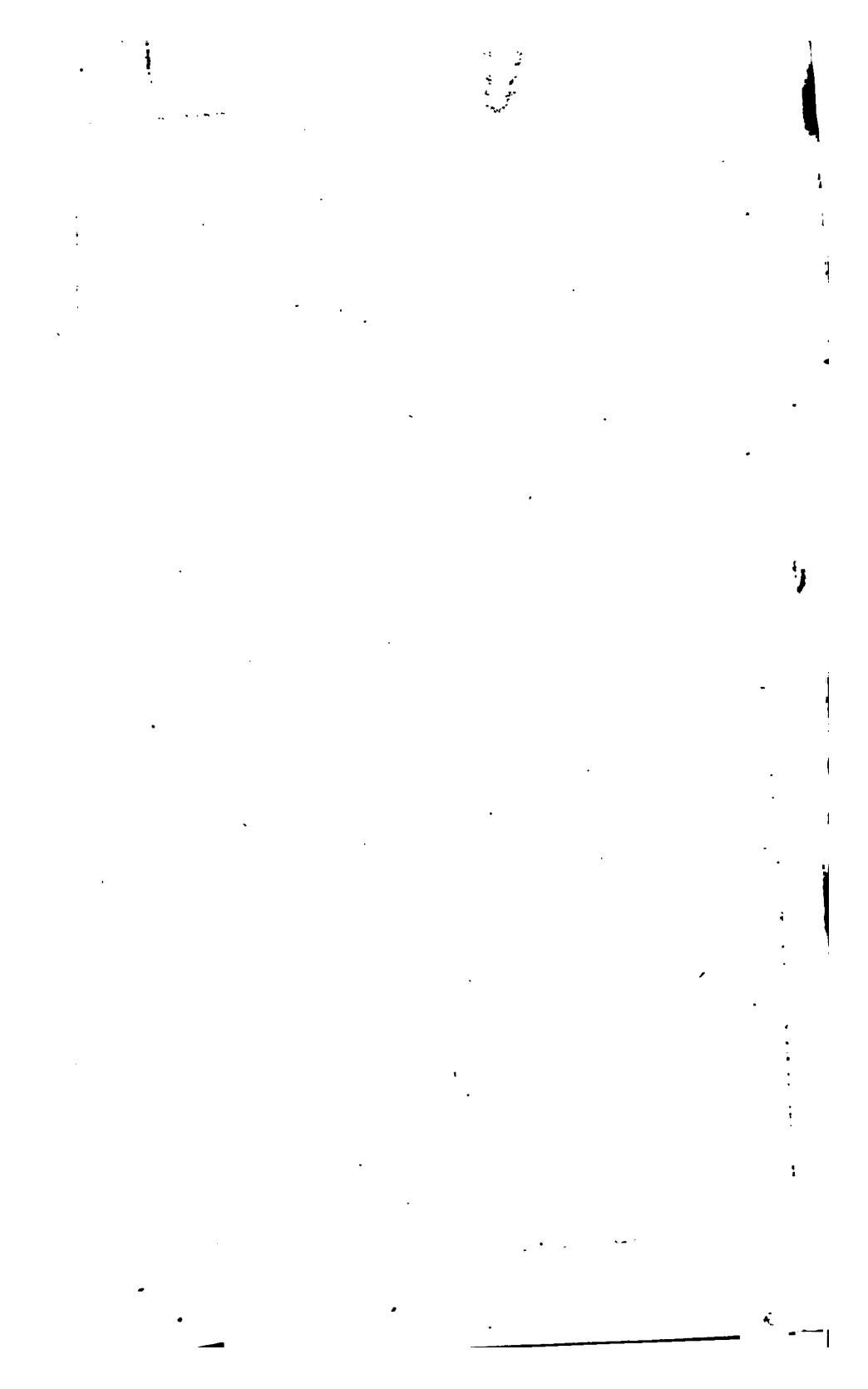
tile by nature, an acre of Gigha is, at an average, worth 4 acres of either of them. No less than 42 acres were under green crops in 1808, 12 in beans and peas, and 14 under a crop of sown hay, which was ready for the scythe the last week of June. How different this from the old system! *Then* there were no green crops at all: the little meadow hay which was made, was obtained with great difficulty in September, the rainiest month of the year; no beans or peas were ever thought of, nor indeed any other crop, excepting barley and oats, while the land would yield two returns for the seed of either: After being completely scourged and exhausted, it was left for some years ley, to recruit itself the best way it could, and then undergo the same barbarous treatment as before. It is of great consequence to this fine little island, that the proprietor spends a considerable portion of his time in it, and keeps a large farming establishment there all the season. This farm is indeed beautiful, and affords a most favourable specimen of what skill, perseverance, and judicious management may effect in the Hebrides. The traveller finds every thing consistent and regular;—*without*, in the fields, he meets with industry and comfort—*within*, with hospitality, elegance, and ease.

2.—ISLAY.

THIS has in ancient times been called by the Hebrilians *Banrigh*, i. e. *Queen* of the isles, and with good reason, whether we advert to its fair exterior, or to the qualities of its soil and products. Dean Monroe describes it in 1540—9 as follows :—

“ Ila. Nar this foresaid iyle, on the west side of it, layes Ila, an ile of twentie mile lenthe from the north to the south, and sixteen myle in breadth from the eist to the west, fertill, fruitfull, and full of natural grassing, with maney grate diere, maney woods, faire games of hunting beside every toune, with ane watter called Laxay, whereupon maney salmon are slaine, with ane salt water loch callit Lochegunord, quherin runs the water of Gynord, with high sandey bankes, upon the quhilk bankes upon the sea lyes infinit selccheis, whilkis are slain with doges learnt to the same effect. In Ila is meikle lead ure in Mochyills. In this iyle there is ane guid raid for schipps, callit in Erische Polmoir, and in English, the mechill puill; this layes at an toune callit Langlay Vanych. Ane uther raid layes within Ellan Grynard, callit, in English, the isle at the poynt of the Nesse; the raid is callit Leodannis. Within this iyle thar is sundrie freshe water lochis, sic as Lochmoyburge, wherein ther layes an iyle pertaining to the bishopes of the iyles; the loch of Ellan Charrin, quherin ther is an iyle pertyning to M^cGillane of Doward; Loch Cherossa, with an iyle pertaining to the abbot of Colmkill.





Colmkill. In this iyle there is strenths, castells; the first is callit Dunowalk, biggit on an craig at the sea side, on the southeist part of the countrey pertaining to the Clandonald of Kintyre; second is callit the castle of Lochgurne, quhilk is biggit in an iyle within the said freshe water loche far fra land; pertaining of, auld to the Clandonald of Kintyre, now usurped be Mr-Gillayne of Doward; Ellan Forlagan, in the middle of Ila, an faire iyle in fresche water *." There are some circumstances in this description which are striking, and yield a surprising contrast to the impression which Mr Pennant's account of the island in 1772, two hundred and thirty years posterior to Monroe's, is calculated to make upon the reader. The description written by the Dean is highly favourable. He paints the island as fertile and productive in the animal, vegetable, and mineral kingdoms. Lead ore was wrought in Mochyllis as at present: quantities of salmon were caught in the rivers, and seals were hunted at Loch Gruinart with dogs trained for that purpose. This is unique in Hebridian history, and certainly deserves notice. No dogs now to be found in Britain could have any chance of killing one of the seals which we have seen in 1808 basking on the sandy banks of Loch Gruinart, as described by the Dean; nor is it easy to

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conceive

* The rent paid by Islay at this time (1342) to Macdonald was as follows, viz. In money L45. 1d. Scots,—meal 2593 stone,—marts, or fat cows or bullocks, 301,—mutton 301,—geese 381,—poultry 301,—cheese 2161 stone. Vid. Pennant's Tour, v. 3d, p. 254.

conceive in what way a dog could seize a seal so as to hold him fast or to kill him. The seals in question are seven or eight feet long, and possess immense strength. There must certainly have been either a species of dogs (now extinct) then common in Islay, or some art, at present lost, of assisting the dogs in killing these seals.

George Buchanan does not follow Dean Monroe so slavishly in his description of Islay, as he does in those of the other isles, but transcribes from Boethius and Fordun their account of the mineral productions of the island, as well as that of the palace and court of justice of the great M'Donald of the isles.

Martin's account of this fine island is very superficial and unsatisfactory; and indeed so confused, especially towards the conclusion, that the reader has some doubts as to his having travelled through it, though he expressly asserts that circumstance.

Islay, as the most improved of the large Hebrides, and as the leader and model of the other isles, deserves particular attention in a report of this kind. Its extreme length from the point or Mull of Oé to Rùmháil, *i. e.* from south to north, is very nearly 31 English miles, and its breadth from the point of Ardmore on the east to the form of Sanaig, and the opposite extremity of the Rinns on the west, is about 24 miles. Were it a solid quadrangle of these dimensions, therefore, its surface would be considerably more than double its real extent. It would be 372,000 acres, whereas its total superficies is known to be about 154,000 acres, of which one 7th, or 22,000 are actually in occasional or regular tillage; two sevenths rugged mountains, rocks, and lakes; three sevenths hill pasture, coppice-

coppice-woods, plantations, and natural grassings, for the most part impervious to the plough; and one seventh unimproved, but improveable moor, peat mosses, and unreclaimed wastes*. The island comprehends three parishes, Killarow or Kill-rû, Kilchoman, and Kildalton, and has a population of very nearly 11,500 souls. It has doubled its population within the last 60 years, and rather more than quadrupled the value of its stock. Mr Campbell of Shawfield, so often mentioned in this report, is proprietor of the whole island, excepting two farms which belong to Mr Campbell of Ballinaby.—The natural advantages of Islay are many and great. Its climate is excellent, being mild, and upon the whole less subject to violent alternations of calms and storms, and of heat and cold, than that of the other Hebrides.

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There

* It is probable that Islay was once divided into two islands by a junction of Loch Gruinart and Loch-in-deal. The highest land between these lochs or arms of the sea is not more than 20 feet above the high water mark; and the soil consists of a thin covering of moss over *cailloux roulés*, (rounded sea stones,) mixed with vast quantities of marine shells of different kinds. There are some mountains in the eastern and northern divisions, rising to nearly 1800 feet above the level of the sea. The fresh water lakes are numerous, perhaps 80 or 90, and cover 3000 acres of surface. Loch Guirm in Kilchoman parish is 700 acres in extent, and might be drained at a moderate expence. Part of it belongs to Ballinaby. There are three or four pretty considerable streams, or waters, which, when swelled with rain, assume the dignity of rivers. Salmon frequent the whole of them in great quantities, but are not regularly caught,

There are nearly 48 square miles of primitive limestone, containing no animal exuviae whatever, but rich in lead ore, and exhibiting in many parts favourable appearances of copper. This lead ore has been occasionally wrought with advantage; but the want of wood for charcoal prevents the mines of the island from being turned to such account as they would otherwise be, as well as many other improvements from being carried on to the proprietor's wish. Manganese and cobalt have been found in different parts; and some specimens of the finest iron ore, in this part of our empire, occurred in the island in 1808. It has a striking resemblance with the ore of Siberia, and of the isle of Elba on the coast of Tuscany. The ore of lead is much mixed with copper, which renders the separation expensive and troublesome. The veins rise in some places to the surface, and were probably wrought in the times of the Norwegians by means of scooping irons, which Mr Pennant thinks were employed by that nation of miners, but the use of which has since been lost. The copper yields in the richest places 33 pounds per hundred, and 40 ounces of silver from a ton of the metal. The ounce of silver sells at 6s. Sterling very nearly. The proprietor of the ground has one eighth of the produce of the mines; and the tenants, on whose farms they are wrought, are entitled to compensation for the surface damage sustained by their lands. Not far from one of the principal mines are vast strata of bog ore of the concrete kind, and beneath them large quantities of vitriolic mundic. On the top of a hill, within a short distance of Portascaig, are some rocks with veins of emery running in the midst of them, in a horizontal direction, and from one to three feet thick,

A small quantity of quicksilver has been found in the moors and at the bottom of wells, which ought to prompt to a more careful search. There are inexhaustible treasures of hard and soft marl for manure to be procured in different parishes of Killarow and Kildalton, and considerable quantities of sea-weeds are cast ashore at every season of the year for the purposes of kelp and manure. There is abundance also of coral and shelly sand. The soil is not only extremely well adapted to the cultivation of the common Hebridian crops of barley, oats, flax, potatoes, beans, and peas, but also to those of hemp, wheat, and of every species of green crop or grass, and, indeed, of whatever is cultivated with advantage to the northward of York. The immense trunks of trees, oak, sycamore, and birch, &c. which are found in the peat mosses, are a proof that Dean Monroe was right in giving Islay *maney woods*: and the appearance of the present proprietor's plantations gives reason to hope that the island may yet be as richly clad as it was some centuries ago. The soil is particularly favourable to the growth of trees, and that even near the shores of Loch-in-daal, as may be seen from the beautiful and fertile trees in the garden of Islay house. Notwithstanding the excellence of situation and climate, and the fertility of soil for which Islay has long been celebrated, the feu-duty of L.500 per annum paid to the crown for this island by the family of Calder, which possessed it from 1626 to 1719, was found so heavy, that the family in question sold it at the last mentioned period for L.12,000 to Mr Campbell of Shawfield, grand-father of the present proprietor. Every thing connected with this fine island is interesting to the Hebridian agriculturist; and there-fore

fore an account of the manner in which it attained its present pre-eminence over the other Hebrides may not prove superfluous. Mr Campbell of Shawfield not only purchased what lands belonged to Lord Oulder in Islay, (for he had not the whole of it,) for L.12,000, but also the island of Jura, excepting two or three farms which were in the possession of the Duke of Argyle and Mr Macneill of Collonsay. Perhaps what he wanted of Islay was worth as much as what he purchased of Jura at that time. He afterwards sold his Jura estate, excepting the farm of Tarbert, for the sum of L.3000, burthening the island, however, with an annual feu-duty of L.55. 11s. 1½d. and four red deer or stags, besides the privilege for all cattle coming to Islay or passing from it to pasture gratis * in the island of Jura, as long

* The reservation and privilege here mentioned has lately led to a sort of question between the proprietors of Islay and Jura. In former times, the cattle exported from Islay, for the mainland markets, were never strong enough for the journey until the middle of June, the driest and best season of the year. They were then driven by herdsmen thro' Jura by a hill road (the shortest possible way,) which went between the back of the farms, which are all on the eastern shore, and the mountainous ridge which occupies the middle and western parts of the island. They had freedom of pasturage gratis, as above stated, during this journey.

In consequence, however, of the late improvements carried on in Islay, the cattle of its proprietors and tenants are much earlier ready for the market than June, and, indeed, are exported all the year round; and they are, also much heavier

long as they might be detained by stress of weather or any other necessary cause. In the year 1780, the present laird of Islay sold the farm of Tarbet for L.3,400 and an annual feu-duty of 8000 oysters, fixing at the same time the ferry from Jura to the mainland of Argyleshire at 10 pence per head for cattle and horses, and the ferry from Jura to Islay at five merks per score; the proprietor of Jura being prohibited from ever raising them without the concurrence of the proprietor of Islay.

At that period the estate of Sunderland in Islay belonged to another proprietor; but in the year 1788 Mr Campbell of Shawfield purchased it for L.10,000; so that, deducting the sum received for Jura, together with the feu-duty, *the purchase money of Islay may fairly be stated at L.15,000 Sterling.* The present proprietor's rents in 1779 were L.2700, and they *now exceed L.11,000 per annum*, without a shilling of arrears. So greatly is the island indeed improved, and such is the present condition and spirit of its respectable
and

heavier and more unwieldy than they were in former times, and consequently cannot travel along the hill road. The road now making, and of which one half is made by Government, is carried along the eastern shore; and Mr Campbell of Shawfield maintains that he is entitled to the use of it for the cattle of Islay in their passage through Jura; while Mr Campbell of Jura alleges that Islay is limited to the hill road only, which is practicable, as already mentioned, during the summer months.

and industrious tenants, that were all the farms to be let in 1810, the estate of Islay would, exclusive of mines or kelp, very probably fetch L.16,000 per annum.

About 30 years ago there was no carriage road, and not above two or three carts in the whole island. There are now 90 miles of carriage road in different directions, and above 500 carts. At that time, green crops and sown grasses were almost absolutely unknown, and very little natural hay secured for winter use: At present every tenant makes as much hay as supports his stock in winter; and has not only potatoes, cabbages, and meal in abundance for his family, but also frequently sells corn and potatoes, and feeds his cattle up to a third more weight than his predecessors were wont to do. Most of the gentlemen farmers have turnips, rye-grass, and clovers in great perfection, and the smaller tenants are anxious to follow their example. The cultivation of wheat was, until very lately, never thought of in Islay; but Mr Campbell of Shawfield, and several of his more opulent and adventurous tenants, now raise considerable quantities annually, and find it to answer astonishingly well. It is probable that the species commonly called summer or spring wheat will continue to be the favourite sort of this grain; and that, although the cultivation of it may not perhaps be advisable in general over the Hebrides, yet, in consequence of various circumstances favourable to it in Islay, and especially the building of a flour mill by the enlightened and patriotic proprietor, (which cost him L.1200,) this valuable crop may be extended over a large portion of the best farms in the island. Several
thousand

thousand bolls of potatoes, and considerable quantities of barley, are exported yearly; perhaps, indeed, too much of the last mentioned crop, in consequence of the great demand from the opposite coast of Argyle and Kintyre for the purposes of distillation. The proprietor, however, does all in his power to prevent smuggling and every species of clandestine and illegal operations in grain, and in every other commodity, fully aware of the bad consequences resulting from these to many of the most fertile Hebrides. He has accordingly built, in the heart of Islay, the only brewery in the Western Isles, for preventing the evils alluded to, and for gradually weaning off his tenants from a taste for ardent spirits, and accustoming them to the more nourishing and wholesome beverage of ales; and has, by these means, not only improved the agriculture, but also the morals of the island.

A staple commodity of Islay is linen yarn, of which, besides very considerable quantities which are manufactured and used in the placé, about the value of L.5000 has been annually exported during the ten years preceding 1807. The proprietor encourages this manufacture, and the cultivation of flax, by every possible means. He has also, as already stated in this report, commenced the raising of hemp, and will probably henceforth promote that valuable branch of agriculture in his beautiful little principality.

The quantity of kelp made here is not so great as might be expected, from the extent of the shores, (200 miles following the sea mark) or the industry of the inhabitants; but the circumstance may be easily accounted for: The tide does not rise above six or eight feet

feet at an average around the shores, and consequently does not prove so favourable to the growth of the various sorts of sea weeds, as the high tides of 16 feet and upwards do in many of the other islands: The shores are also too bold, and too much exposed to the fury of the Atlantic Ocean. Yet, although Islay cannot be expected to make such quantities of kelp as the same extent of shore in the Long Island, or on the coasts where circumstances are more favourable, there is a sufficient quantity to draw the attention of the proprietor in some degree to it. Mr Campbell of Shawfield gives liberty to all his tenants to make what kelp they can upon their farms, on condition that he shall receive *one-third* of the market price of the article when sold, it being understood that he has no concern with any expence in the manufacturing of it, or in any thing else, excepting his proportion of *one-third* of the charges of freight from the island to the port where it is to be sold. The quantity made is about 200 tons.

Horses are exported in considerable numbers of late years. From 120 to 180 have been sold, at from L. 7 to L. 12 each horse, to Irish dealers, who purchased the very refuse of Islay at these astonishing prices, and carried them off for services of which the reporter could procure no plausible account. The island usually exports altogether from 250 to 300 horses of different descriptions annually, and will probably soon become as celebrated for that species of live stock as it has long been for black cattle. Saddle horses often sell at L. 40.

There are no sheep-farms, in the strict meaning of the expression, in Islay; not are there more sheep kept

kept than merely supply the island with wool and mutton;—considerable quantities of wool are imported.

Hogs are reared in great numbers, and the better breeds already recommended are gradually introduced. They sell fat at L. 1. 10s.—L. 2. 2s.

Black cattle are, however, the staple export of Islay, and constitute by much the greater part of the wealth of the island. It appears, from the list kept by Mr Hill, who rents the ferry of Portascaig, that the following numbers were exported during the seven years stated: viz.

1801,	3498	head of black cattle
1802,	2574	
1803,	2420	
1804,	2339	
1805,	2756	
1806,	2318	
1807,	2381	

7)18,484

Annual average 2640 $\frac{1}{2}$ at L. 7=L. 18,484 per annum.

Supposing one-fourth only to be exported yearly, which is a low average, this number will give 10,862 $\frac{1}{2}$ head of black cattle as the stock of Islay, previous to the first yearly market. The cattle sold may be moderately computed at L. 7 Sterling over head, though Mr Campbell of Shawfield's stock often sells at from L. 13 to L. 15, and those of Mr Campbell of Ballinaby and several of the gentlemen farmers stocks at L. 10 or L. 11,

L. 11, and sometimes L. 13 in favourable seasons. The sort of cattle chiefly exported is three years old bullocks, and such yield heifers and cows as do not well answer the farmer's purpose. The number of black cattle in the possession of gentlemen farmers in Islay in 1810 was as follows: viz. Milk cows 1859, which may be considered as constituting nearly one-fifth of the total number of black cattle from the age of one day to that of 20 years. This gives the gentlemen the number of 6795, and leaves the tenants and cottars, &c. 3767, or rather better than one-third of the total number on the island. Such tenants rent their lands under the denomination of *groat* lands, (*Gállicé, cota bán,*) at the rate of from L. 8. 10s. to L. 10. per annum. The numbers of their cattle vary according to circumstances dependent upon their lands and management; but they do not so imprudently and absurdly overstock their ground as is done by the common run of tenants in the other Hebrides. The island was divided, according to the old valuation, into 337 half merk-lands, and valued in 1751 at L. 739. 18s. 2d. but the subdivisions and denominations by which lands have lately been let are different. They are as follows, viz.

1. *Cearabh*, a quarter land, or 8 groat or 32 penny lands, which are commonly rented at L. 70. or L. 80 Sterling.
2. *Ochtobh*, or achten part, i. e. half the former, or half a quarter land, pays half rent accordingly.

3. *Leor-theas*, supposed to be synonymous with a plough-gate lands, is one half of an *ochtohh*.
4. *Cota bán*, a groat land, is one-half a *leor-theas*.
5. *Dà-skillin*, a twopenny land, is half the *cota bán*; but no more lands are to be let by the proprietor of Islay under this denomination, which he considers as too minute a subdivision, and accordingly unfavourable to the agricultural prosperity of the island. The tenants generally keep four horses on a groat lands, or *cota bán*, and from 7 to 10 cows.

The rents paid both by gentlemen farmers and smaller tenants in Islay depend more upon the circumstances of their lands than the extent of their surface, or the number of bolls of seed corn which they may annually sow. Perhaps the more common criterion is the number of milk cows, or cows producing calves, which they can maintain on the lands, along with a proportionable quantity of young stock. Each milk cow kept by a gentleman farmer pays nearly L.3. 10s. and every one belonging to a small tenant L.2 per annum. Thus, a farm which maintains 100 milk cows with their followers, should pay L.350 per annum as rent to the proprietor.

Islay exports the best part of its saleable cattle annually to Dumbarton, Falkirk, and the Lowland markets; but it has also fairs and trysts within itself. There is usually a cattle fair at Portasraig on the 18th of May, for bullocks and heifers; at Bridge-end, near Islay-house, on the 15th October, for brood cows;

and meetings are occasionally intimated from the different churches for similar purposes. There is a market for horses at Bowmore the first week of August, and another also at the same place, chiefly frequented by Irish dealers, on the first week of November.

The excellence of Islay cattle, and their aptitude for fattening when carried to the rich pastures of the Lowlands or England, may be judged of from the following short statement, written and subscribed by the party concerned.

Pencaitland House, 30th May 1809.

‘ I John Hutcheson, flesher in Haddington, bought
 ‘ from Walter Campbell, Esq. of Shawfield, a five-year
 ‘ old Highland or Islay heifer, which I slaughtered in
 ‘ Haddington market the 5th of last April, and weigh-
 ‘ ed as follows :

	St.	lbs.
4 quarters	47	0
Tallow -	11	14½
Hide -	3	6
<hr/>		
Total	62	4½

‘ The heifer had been brought from Islay on the 17th
 ‘ of June 1807, aged 3 years, and was not fattened by
 ‘ any extra food more than the rest of Mr Campbell’s
 ‘ herd at Pencaitland ; and I paid him thirty-one pounds
 ‘ ten shillings Sterling for her, and made a considerable
 ‘ profit,

'profit, as the beef was of excellent quality and flavoured.
'your.

(Signed) 'JOHN HUTCHESON.*'

This certificate is worth a thousand arguments in favour of the Islay and best Hebridian breed of cattle, and supersedes the necessity of any further encomiums upon them: suffice it to mention, that Mr Campbell of Ballinaby, and also the most wealthy of Mr Campbell of Shawfield's tenants are gradually bringing their stocks of cattle to resemble the stock on Shawfield's immense farm, both in point of shape and size. It would indeed appear extravagant and romantic to make any calculation at present on what the value of this island may soon be in live stock; but we may safely predict that a stock of ten thousand head of black cattle, such as the island may always maintain, will be raised by means of the improvements now carrying on, to amount to the value of ten pounds each; and thus one hundred thousand pounds worth of cattle may roam over the fields of *one* of the Hebrides, and that one only the *fourth* in rank of them in point of superficial extent. The proprietor has the merit of the greatest part of this improvement.

Potatoes are in Islay, as in the other isles, an article of first-rate importance. One-fifth of the ground in
R r 2 cultivation,

* Since writing the above, the reporter has learned that some cattle from Islay, treated in a similar way at Pencaitland, have, in consequence of the late rise in the markets, sold as high as from L.35. to 40 guineas in the shambles of Haddington.

cultivation, or 4400 acres, are occupied by them ; but of this space one-third is necessarily lost in ditches and furrows, as most of the common tenants raise them by the lazy-bed method. If we suppose, therefore, one-third of the ground thus allotted to potatoes, lost, or allow 1366 acres to the ditches, drains, and furrows, of all the potatoe grounds in Islay, we have a remainder of 3034 acres as the superficial extent of land actually under potatoe crops each year. Now, as the tenantry of Islay pay most particular attention to their potatoes, and devote a considerable part of the summer to the hoeing, cleaning, and dressing of them, we may calculate 20 bolls as the average crop per acre. The whole island then raises 60,680 bolls, or nearly six bolls for every individual inhabitant of the district. This quantity affords a large surplus for exportation ; and potatoes accordingly yield a considerable revenue to Islay. The quantity raised, however, is by no means used by the human inhabitants only ; one-fourth or more is given to young stock and milk cows, and proves a valuable addition to the other sorts of winter provender secured by the people.

The superiority of management with regard to this crop, observable in Islay, consists in the attention paid by the natives to the cleaning and draining of the land ; in their great care to manure it regularly and richly ; and to turn new soil, from the ditches or furrows, occasionally upon the ridges, by means of spades and shovels well contrived for that purpose. This last mentioned operation they very properly call *leassacha*, i. e. *repairing* or *additionally improving* the potatoe ground. In no part of Britain indeed, and no part of the Continent, Holland

Holland itself not excepted, have we met with such excellent management of potatoe ground as in Islay by the common tenantry; and, in truth, it is such as to leave very little to wish upon the subject. The potatoe cuttings are placed upon the manure, and the furrow turned over them. The distance of the cuttings is in general 10 or 12 inches, and, where drilled, the furrow is double, and about 22 inches broad. During the months of May, June, July, and August, women, boys, and frequently all the spare hands upon the different farms are employed in cleaning them from weeds, in hoeing them, and in raising fresh earth around their stems, and in the *leassacha* above mentioned.

The quantity of hay raised in the island increases rapidly every successive season. The use of lime, marl, and shelly sand or coral, now generally introduced, and employed even by the small tenants, communicates to the verdure of Islay a luxuriance of green rarely to be met with in Scotland, and reminds the traveller of the meadows of England and Upper Austria. There are indeed few scenes more charming than that which the parks around Islay-house, and the whole country to the north and east of Loch-in-daal, afford in a summer evening.

With regard to the general police and the best interests of the island, we need not add much to what has already been stated in justice to the character and laudable exertions of Mr Campbell of Shawfield. He is a father to his people. The flourishing villages of Bowmore and Portnahaven owe their existence to him. It is proper to mention them here as an example and inducement to other great Hebridian proprietors.

The landlord grants feus for all slated houses and the gardens which belong to them; and gives, for a period of 19 years, a certain number of acres (from five to ten) along with them, of land to be reclaimed from a wild state, the first 6 years gratis, and the other 13 years at a very small rent. For houses roofed with tiles he grants long leases, with some acres of ground, on similar conditions with the former. In consequence of this wise and humane encouragement, many hundred acres around the villages of Bowmore and Portnahaven, which, a few years ago, were used as peat mosses, and not worth 6d. an acre of rent, are now covered with flourishing crops of various kinds, and regularly subdivided and inclosed. Many fields of this description, which were not worth above 6d. an acre of rent 20 years ago, or 15s. of purchase money at 30 years valuation, are now converted into good arable land, and would let at L.2. or sell at L.60 an acre.

The villages in question are also of great service to Islay in various respects. They accommodate some day-labourers and tradesmen, and thus conduce to the benefit of agriculture in a manner sufficiently obvious. They also lodge a number of fishermen, (Portnahaven alone contains 26 families of that useful class of men,) who bring money and industry into the country. The reporter saw, on the morning of the 20th of May 1808, a boat loaded with stenlock-fish, caught at Portnahaven the preceding night, sold at the quay of Bowmore in half an hour's time, at sixpence per stenlock of 12 lb. weight; and the crew cleared L.10 by that night's fishing. The inhabitants of the village were furnished with fresh fish at a halfpenny a pound; and each of the fishermen

fishermen cleared L.2 sterling by one night's industry. On conversing with those fishermen, all of whom were natives of Islay, and appeared to be very decent and intelligent men, it was amusing to hear their account of the success of their labours. They catch a number of stenlock, commonly called *pichtich mór*, i. e. great saithe-fish, off the point of the Rinn of Islay, where the stream is very violent; and they frequently run over with cargoes of them to the opposite coast of Ireland, and sell them under the name of *wild salmon*, *braddan fàich*. This title they give the stenlock by way of enobling a sort of fish for which the Hebridians have in general very little respect; and they alledged, smiling, that the Irish really believed them, when they asserted that it is a particular *genus* of the salmon *species*.

It is to be regretted that government has done nothing in Islay to promote the improvements carried on by the patriotic and enlightened proprietor, who has had a thousand difficulties to contend with, and has met with no manner of encouragement, excepting that which good intentions and beneficent actions always convey to generous minds. The consciousness of doing good is, indeed, the noblest of all recompences to a magnanimous spirit, and especially, as in this case, when attended with success; but a wise government ought to foster and invigorate, by the most substantial encouragement, such exertions as those of the proprietor in question. He has done much; but he cannot do every thing. No individual's fortune or time are adequate to the calls upon him in prosecuting the ameliorations possible in Islay. He cannot set up manufactures or grant very

expensive premiums out of his private purse, without ruining, not only his fortune, but also the very objects which he wishes to promote. These are truly worthy of all the attention which a liberal public and a paternal government can bestow. Mr Campbell is the Hebridian who has done the greatest good to this district in our times, or perhaps since they were first peopled; and it is singular that no co-operation has been extended by government, or any public body to his measures. The manufactures desirable to be established in his fine island, it is not a difficult matter to specify;—perhaps those of linen and of bleaching, hemp, tanning, dressing, and working leather, for the use of the other islands; the business of ship and boat building, and of cooperage, at Bowmore and Portnahaven; saddlery, rope-making, and the construction of agricultural implements, might be tried with advantage, if some considerable aid was given by the public towards setting them on foot; the unparalelled increase of the population, renders the adoption of some manufacturing plans necessary; for, although the proprietor sacrifices a considerable rise of rents, and what is still more hard upon a mind like his, the essential improvement of the island, and of the condition of the people themselves, to the dictates of humanity, which forbid his turning off such men as he cannot accommodate with lands in a way consistent with his general system; it is absolutely impossible for him long to maintain, in the situation of a dead weight upon his territory, hundreds of families destitute of room and of regular employment. The manufacture of kelp, to which we have already alluded, would, even although the natural circumstances of Islay were

were more favourable than they are, afford only a temporary relief during a few months of the year, and those months, too, always the busiest of the season, when every one can find abundance of work in securing fuel, and managing the potatoe and other crops. Nothing short of regular and stated occupations in some lucrative manufacture, during the winter and spring months, will yield a sufficient relief to an overgrowing Hebridian population in the first instance :—They will afterwards, indeed, gradually obtain capital, and then be in a situation to improve waste lands, and to reward tenfold the proprietor on whose estate they have been enabled to subsist.—The difficulty consists in providing for them until they can maintain their rising families, and save a little capital with which to begin the world. Mr Campbell of Shawfield has always shown his tenants his resolution of improving their circumstances and situation, along with those of the estate. Of him no man in Islay, or elsewhere, could ever say, *‘that he reaped where he did not sow.’* Every improvement carried on by his tenants is sure of meeting with encouragement and reward. He knows the situation of his people; he knows themselves personally; and carries on friendly intercourse with them. He resides every year for three or four months at Islay-house, rides through his island, superintends his improvements, and takes pleasure in viewing those of his tenants. He knows every farm of his estate ;—but his knowledge is not applied, like that of many landlords, to the purposes merely of screwing up the rents of his lands—No !—it serves those of candour, equity, and honour. He never listens to the insidious offer of the over-bidder for the lands of his neighbour ;

bear; but judges for himself; prefers the good man for the good farm; rewards or punishes according to the well known characters with whom he has to deal; but never, in any case, not even towards the undeserving, manifests a tendency to rigour or oppression. It was truly delightful to hear the language of the tenantry, even in the remoter parts of the island, when their proprietor's name was mentioned.

But the superiority of Islay to the great mass of the Hebrides must have also owed its existence to some steady systematic management, followed out with regular energy by a good man, as well as to the humane and liberal dispositions of that man individually; for there are numbers of excellent gentlemen in the Hebrides, who are disposed to do good, but have not yet attained the object of their wishes, like Mr. Campbell of Shawfield. This is truly the case—and *that* is the great cause. His management is indeed essentially different from that of most Hebridian proprietors, and has accordingly produced very different results from theirs. We shall, therefore, mention a few of the leading points, in which his mode of management seems to have had the happiest effects—leaving it to the gentlemen alluded to, to follow it or not as they shall think proper.

1. Mr. Campbell resides every year on his estate; spends a large share of his income among his own people; knows them and their situation intimately; and by means of a farm of some thousand acres, under his own immediate management, sets an example of husbandry to his tenants, which does more good than a thousand volumes of directions, advices, penal clauses, and restrictions, or all the assurances which any thing short
of

of ocular demonstration could convey. He shows them his fine fields of turnips, and his fat sheep and cattle eating them.—They see and imitate.

2. He grants leases, generally of 19 years, to *all* his tenants, great and small, without exception,—so that he has really *freemen* insured in the possession of their tenements, on his estate, and not miserable *slaves* whom he may turn off at pleasure.

3. He knows his lands, and what they are worth, and never lets them to any tenant at a high rent, far less an unreasonable or rack-rent in consequence of *private offers*; but gives them at a moderate rent, on conditions equitable, plainly expressed, and perfectly well understood; to men of good characters, both as farmers and as members of society.

4. He gives melioration, i. e. he pays at the end of the lease, to every out-going tenant, a fair and adequate sum for all houses which such tenant may have built with stone and lime, above 8 feet high in the side walls; as also for all stone walls or dykes, drains, and other *permanent improvements*. This is one of the great causes of the present prosperity of Islay, and of her superiority to the other large Hebrides.—It cannot be too universally known in our British island.

5. He takes a great interest in the prosperity of his tenants, and helps them to improve their breeds of live-stock, to import good seed corn, and try new crops which promise well for the island; to import and use improved agricultural implements; and, in short, his friendly advice and active aid are never withheld from such tenants as apply for them.

6. He helps the police of his estate in every conceivable shape:—He suppresses smuggling and illicit distillation; and is a determined foe to every species of immorality and disorder.

7. He promotes the establishment of fairs and markets, and that of direct communication with the lowlands of Scotland; a *weekly packet*, (a well appointed sloop of 50 or 60 tons,) sails from Portascaig for Tarbert in Kintyre for letters, newspapers, and passengers; and two regular packets trade between Bowmore and Greenock all the year round. This is a matter of immense consequence to the island, and has proved eminently conducive to its improvement.

8. He has made roads through the country, and encourages his tenants to make bye-roads and cross-roads for their own accommodation. His encouragement never consists in mere words, but is substantial, judicious, and solid, as the people well know to their agreeable conviction. Without this improvement all others would have been null.

9. He has founded the two flourishing villages of Bowmore and Portnahaven; and, by granting feus in them, set an example of liberal policy and enlightened humanity to the whole proprietors of the west of Scotland. He has also built wheat and flax mills, thrashing machines, &c.

10. He and his lady pay great attention to the moral and religious improvement of their people;—they are the steady friends of the industrious, and the refuge and protectors of the poor. As an instance of the state of education, it is pleasant to mention the actual condition

tion of the school of Bowmore. A population list of that village, in May 1808, was made by the schoolmaster with all possible care, and the following result ascertained. It has increased considerably since that time.

The total population was . . .	670 souls.
Number of Males, . . .	305
of females, . . .	365
The scholars attending Bowmore school were . . .	124
of these were boys,	75
girls,	49
Scholars	
32	Arithmetic.
6	Book-keeping.
1	Navigation.
1	Land-surveying.
9	Latin.
30	Reading English, and writing.
45	Reading Eng. aged from 7 to 18 years.

Did the limits of the report admit of adding any thing further on the flourishing condition of this beautiful island, and the laudable conduct of its proprietor and tenants, much might be added, which would prove equally pleasing to the reporter to state, and to every patriotic Briton to read ; but enough has been mentioned to convey to the public both the knowledge of the agreeable facts collected on the spot in Islay, and also the causes of the prosperity manifested by that island. It was a disappointment to miss the proprietor, who usually arrives in Islay towards the middle of July, and remains there till the end of October ; but the reporter met with every civility from his tenants ; and with all that a gentleman and friend could possibly do in promoting

moting his undertaking, from Mr Campbell of Ballinabeg. He has, therefore, the pleasure to look back on the time spent in Islay as one of the happiest periods of his life ; and equally interesting, whether recollected as dedicated to the contemplation of a sequestered island in a state of rapid improvement, and unlooked for approaches to a high stage of refinement ; or as enjoyed in the conversation and company of a most polished and hospitable class of his Hebridian countrymen.

9. COLLONSAY AND ORONSAY.

THESE form one island when the tide retires, but are separated at flood tide by a firth or arm of the sea, nearly a mile broad and from eight to twelve feet deep, according to the state of the tides and the seasons of the year. They lie not as Mr Langlands lays them down, but north by west of the northern extremity of Islay, at the distance of nearly nine miles, and are, from the southern end of Oronsay to the northern of Collonsay, 12 miles long and from one to three broad. The superficial contents are nearly 9,000 Scots acres, of which one third or 3000 are meadow or arable ground. Dean Monroe describes them as follows :—
 “Ornansay. North from Ilay laves an iyle callit Ornansay ; it is twa myle linge, and neire all meikell in breidth,

breadth, quherin ther is an monastery of Chanons, mayne laiche land, full of hairs and foulmarts, with convenient havens for Heyland galeys, and shald at the shores. It lays eight miles of sea north from Ila. Beside this iyle Ornansay, laves ane uther ile lesse then it, callit by the Irische, Ellan Namuche, half ane myle lange, which is guid for swyne and alse uther bestiall."

"Colnansay. Northward from the iyle of Ornansay, be an half myle of sea, lyes an iyle callit Colnansay, seven myle lang from the north-eist to the south-west, with twa myle bredthe, ane fertill iyle guid for quhit fishing. It hath an paroche kirk. This iyle is brukit by an gentle capitane, callit M'Duffyhe, and pertened of auld to Clandonald of Kintyre." Buchanan barely mentions Collonsay and Oransay by name; and Martin's account, a century posterior to Buchanan's, is so strangely inaccurate, that although he mentions some circumstances respecting his landlord and the family with whom he lodged there, it requires great confidence in his veracity to believe that he ever saw the island of Collonsay. He says that it is four miles in length from east to west, whereas it runs in length from north to south, and is, at least, exclusive of Oransay, ten miles long. He calls its breadth *a mile*, which breadth must of course be south and north, as he describes the length east and west: but any man approaching Collonsay must see that it is several miles long from south to north, and cannot possibly make so gross a mistake as to suppose it only one. But whether Martin was here or not, is a matter of little consequence; his description of it is entirely confined to the relics of ecclesiastical establishments, and the superstitions

tions of the people. He could not have foreseen that it would in our times be so distinguished as it actually is for excellent agriculture, and for maintaining as good a species of black cattle as any spot in Britain or Europe.

The first sight of Collonsay is very unpromising, and would not lead a traveller to expect the fertile and pretty extensive vallies which he meets with in traversing the island. Although there are no hills of any consequence, or which exceed an elevation of 800 feet above the level of the sea, yet their tops are bare and weather-beaten, and convey the idea of hopeless barrenness and desolation. These hills are scattered irregularly over the island; and, in fact, it is from the decomposition of their materials that the soil of the vallies is formed, and it is their shelter which affords warmth and fertility to the cultivated grounds. The soil is various. In some parts, especially at the two extremities, and in some bays on the west side, it is light and sandy; then alternates with moorish or mossy ground, clay, gravel, loam, or till; but, as Dean Monroe says, it is "*ane fertile isle*" upon the whole, and has of late years by good management made a conspicuous figure among the improved Hebrides. Black talk, the mica lamellata martialis nigra of Cronsted, is found here, both in large detached flakes, and immersed in indurated clay; also rockstone formed of glimmer and quartz, and an imperfect granite is not unfrequent. The dip of the rocks is from south-west to north-east, as is very often the case in the adjacent isles.

The present proprietor, Mr Macneill of Collonsay, has not only turned the land formerly in tillage to the best account, but also reclaimed a great extent of moors, hills,

hills, and peat mosses, from a state of absolute waste, into that of arable and productive soil. He has introduced the improved husbandry, in the utmost latitude of the expression, into Collonsay; and both his crops and his live stock are among the best in the West of Scotland. He follows the rotation of cropping his lands, whether of green or white crops, that are the most generally approved of on soils, and in a climate similar to his, and of which mention has repeatedly been made in this report. His rotation for the first four years of newly reclaimed land is,—1. Break up with oats. 2. Manure with turnips, beans, peas, or potatoes. 3. Bear or barley with grass seeds. 4. Hay and foggage; and to recommence. His management of green crops is particularly excellent and judicious, in consequence of which he rears a great number of cattle to a value *triple* that of the breeds and individuals which Collonsay was wont formerly to export. He has done on a more limited theatre much of what Mr Campbell of Shawfield has done in Islay, and proceeds, year by year, rapidly advancing in the career of improvement. The excellence to which he has brought his stock of black cattle will appear from the circumstance of his being in the habit of selling his three year old bullocks as high as from L.10. to L.14. each, while cattle of the same age, and originally perhaps of the same breed, fetch only L.5. or L.6. in the Northern Isles; and it is also proved by the following note, written and signed by himself:—"In August 1806 I sold to Mr Sitwell the undermentioned cattle, at the prices specified in this note; viz.

S.S.

One

One four year old bull, . . .	L.170
Two four year old, two three year old, and two two year old heifers at	145

(7) 315 (L.45. each

Collonsay, 23d May 1808.

N. B. I refused two hundred guineas from Mr Sitwell for another bull which I still keep in this island.'

(Signed) JOHN M'NEILL."

The breed of cattle preferred by Mr M'Neill is the West Highland, or the real, ancient, pure Hebridian, improved by good management, and by selecting the handsomest pairs as breeders. He is partial to the pure black colour, the long, close, and healthy pile of hair; and, in short, to the circumstances of figure and appearance which have been already detailed in our chapter on live stock, and most of which were kindly suggested by that intelligent gentleman. He has gradually increased the size of his cattle; because, by his judicious management of turnips, potatoes, grasses, and winter housing, he can afford to keep a stock of larger dimensions than the old treatment admitted of; and he finds that the difference of the food consumed by a larger animal is amply made up by the superior price at market. He is, however, by no means an advocate for enlarging the breed rashly in the Hebrides, or going beyond the means of accommodation which the grazier has within his power. He annually rears two hundred calves,—a larger stock than can be found in one fold
perhaps

perhaps in this part of the kingdom. These are well fed from the very beginning ; they are carefully housed in winter and in bad weather ; and have abundance of succulent food at their disposal during the months of February, March, and April, when a considerable proportion of young Hebridian stock annually perishes from want. After his turnips are finished, he gives them potatoes, boiled with steam, and sometimes mixed with boiled barley, &c. which makes very wholesome and nourishing food.

One of Mr McNeill's most essential improvements consisted in putting an end to the custom of overstocking the farms with cows and horses. He reduced the number of the latter from 820 horses to that of 109 work-horses, and 23 mares and young colts. The cattle are somewhat reduced in numbers also, but they are tripled in value over the whole island. There are no sheep farms, but considerable numbers are kept for private use ; and the people turn the wool to very good account. The example of their proprietor's lady is, in that respect, of essential service.

But it is not merely in his management of live stock that Mr McNeill of Collonsay makes a conspicuous figure among Hebridian proprietors ; his farming is still perhaps more remarkable. He takes care to proportion his tillage to his pasture lands ; and to calculate upon both, respectively, according to the demands of his island. He annually brings into aration a certain limited quantity of wild land, proportioning that quantity to the abilities of his teams and servants, and to the nature of the seasons. As an instance of the vigour with which his operations of this nature are carried on, we

here subjoin the work carried on in *one* season, and in *one* field of waste ground, copied from a note written by his grieve or farm steward :—" Labourers 180 days complete, cleaning out whins (furze) and willows, &c. in the west field, containing about 10 acres of land. Ploughing the same field 51 days with one strong plough. Harrowing with the iron break-harrow 20 days. Oat seed sown 12 bolls. (Signed) John Oliver." The average expence of reclaiming waste lands in Collon-say cannot be very accurately fixed, nor can their intrinsic value, after being so reclaimed; but, as nearly as a rational calculation could be made, it stood thus.—An acre of waste ground, whether rocky or spungy and wet, worth, in its present state, 2s. per annum for pasture, may, in the space of three years, be improved by crops of corn and potatoes, or turnips, at an expence of L.10. *over and above the value of the crops*, so as to be worth a guinea of yearly rent. Now, supposing it only raised 16s. in value annually, and sold at 30 year's purchase,—we have land which cost only L.10. and the rent of 2s. for three years, or in all L.10. 6s. an acre, with the interest of L.10. for three years, i. e. L.1. 10s. amounting in toto to L.11. 16s. to sell at L.24. ; and thus have more than doubled the value of the acre in question, by improving it at an expence of L.10. in the first instance. The calculation is, however, excessively moderate, and by no means so flattering to the improver as it might justly be made: for, it frequently happens, that the first two crops pay the expences incurred during the improvement; and that the whole rise of value upon the land reclaimed is obtained gratis: it is also to be considered, that arable land in the improved Hebrides, and in all such

such as are provided, like Collonsay, with great quantities of natural manures, is as valuable as in any other part of Scotland, excepting the immediate vicinity of cities or of large towns; and, therefore, that the rent above fixed might nearly be doubled without any approach towards exaggeration. The proprietors of Işlay, Collonsay, and Gigha, would not indeed let any of the parks which they have reclaimed from a wild state near their houses at L.2, or even L.2. 10s. of yearly rent per acre.

Part of the waste ground, which Mr McNeill has improved by tillage, consisted of pretty steep conical hillocks, covered with rank heather, furze, and other thick matted plants. The nature of the soil, and the conformation of the surface required very careful management both of plough and cattle. His ploughmen therefore began at the bottom of those rounded hillocks, and ploughed them upwards, gradually encroaching by a continued furrow round them, like a person ascending a spiral staircase. By this means the furrow is cast downwards, the hillock levelled somewhat by every successive ploughing; and the ascent is so gradual and imperceptible, that the horses are not incommoded or weakened by it. It was pleasant to see the land thus scientifically tilled by Mr McNeill's servants, as well as the strenuous and successful efforts made by many of his tenants to follow his example.—What a contrast to the clumsy agriculture of some of the finest provinces in France and England, and even of some, such as Lorraine and Devonshire, which are blessed with as good a climate and as rich a soil as any in either of those celebrated countries? About 18 Scotch acres, near Kil-

loran or Collonsay-house, were in 1808 under potatoes, cultivated in the usual lowland manner, and calculated for horse-hoeing: consequently very little space was lost in drains and furrows. The average [quantity per acre probably was 30 bolls, and from 30 to 45, according to the circumstances of the field. He had 29 acres in turnips, which promised exceedingly well, and probably amounted to 40 tons weight each. Supposing his potatoe crop, which turned out a fine one, to weigh 15 tons per acre, we have on one Hebridian farm, in the remote island of Collonsay, one thousand four hundred and thirty tons of succulent food for live-stock, exclusively of hay and corn. The succeeding season, this farm had 1200 bolls of potatoes, and a quantity of turnips nearly equal to what is above mentioned. The weight of 1200 bolls of potatoes, Argyleshire measure and weight, is very nearly 360 tons; so that in 1809, this farm of Killoran had the weight of 1500 tons of turnips and potatoes!! It had also 20 acres of sown hay.

In order to produce such crops, and also to reclaim the quantities of waste ground, to which we have above alluded, it is plain that Collonsay must have had a large supply of good manures. These consist of sea-weeds, shell-sand, common dung, and composts made up of those materials. One-third dung and sea-weeds, and two-thirds peat-moss with scourings of ditches, &c. make a very good compost heap; and frequently serve all Mr McNeill's purposes for his green crops. He uses lime, however, occasionally, although it costs him much in purchase, freight, and carriage.

This

His mode of treating peat-mosses newly reclaimed, is, 1st year, draining thoroughly, by means of open drains very wide at top, and frequently cleaned; then trenching or ploughing carefully, and harrowing when the surface is dry: 2d year, manuring, sowing potatoes, and paying particular attention to clean and dress them: 3d year, sowing oats, with grass seeds, and, of the last mentioned, 9 or 10 pecks of rye-grass, 8 lbs. of red and 12 lbs. of white and yellow clover per acre; admitting no cattle to the ground, lest they should poach the surface, and make holes which would retain water: 4th year, hay twice cut, but no cattle or horses admitted if the surface be not quite firm and dry: 5th year, pasturage for young stock; and to continue in grass until the sward becomes quite consolidated, and able to bear working cattle without any risk of being damaged. After remaining in grass for some years according to circumstances, the land should be broken up for oats; because, if continued too long under grass, it has a tendency to return to its former wild state, and to produce its original heather and different sorts of mosses. The species of oats principally used by Mr McNeill is the Angus-shire or Mearns, and the potatoe oats. He has tried drilled oats as well as barley, but does not seem to think that they have such a decisive advantage over the broad-cast method, as overbalances the inconvenience of being a week or two later of ripening, and somewhat inferior in the quality of the straw. There is, indeed, a saving of more than one-third of the seed; but that saving is too dearly purchased at the expence alluded to, in respect of time and fodder.

The quantity of seed sown per acre varies, according to circumstances, from 1 boll to 2 $\frac{1}{2}$ of corn, and from 1 $\frac{1}{2}$ to 2 $\frac{1}{2}$ or 9 barrels of potatoes. The returns are, of oats and barley, from 5 to 8 ; and of potatoes, from 12 to 25 fold.

It has been formerly observed, that Mr McNeill keeps cottars, whom he employs as often as they please as day-labourers ; and whose work is of essential use in forwarding his agricultural improvements. He gives them from 5 to 8 acres each of arable and pasture land, nearly one-third arable, but altogether susceptible of great improvement. He builds them houses of a comfortable description ; and pays them for their labour while inclosing their land. He also pays them for such drains and other permanent improvements as their possessions need, and as he himself points out for being constructed. While engaged in such employments, from the first day of their taking their crofts until they are fully improved, subdivided, and inclosed, they receive regular payment at the rate of from 1s. to 1s. 4d. or even 1s. 6d. per day.. In order to render this mode of management as little cumbersome and teasing as possible to both parties, Mr McNeill's steward issues to the cottars tickets in lieu of money, specifying the number of hours or days which they have worked ; and those tickets are produced at certain periods for being converted into money. Meanwhile, the tickets in question are as good as ready money to the possessor of them from the moment they come into his hands ; and he may buy and transact business with them in Collonsay precisely as with gold and silver.

The

The accuracy and good order observed by Mr Macneill and his agents in this matter through the island are worthy of all praise ; and they invite other Hebridian proprietors to follow his example. It is not always easy to have at hand large quantities of small money for daily distribution among labourers ; but it is quite so to have small tickets of paper, which serve the same purpose ; and can be converted into one sum at certain periods of the month or of the year. The good effects of Mr M'Neill's crofting system are evident over many parts of Collonsay. The valley (containing some fresh water lakes) which runs south-west and north-east through the island, exhibits the fairest specimens of the industry of these men ; and Mr M'Neill's various improvements show the judgment with which that industry is directed. On entering their houses, and conversing with their wives and children, it was found that they lived very comfortably ; and not only much better than their predecessors did, who had lands almost for nothing, but also more at their ease than any tenantry in the Northern Isles.

Collonsay does not admit of building villages, or of feuing out extensive tracts to fishermen or any other set of tenants ; indeed there is no good harbour in the island for any such establishment ; but Mr M'Neill does all he can for the accommodation of his people, and proves himself, in every sense, an enlightened, judicious, and beneficent Highland proprietor.

No roads were made in Collonsay until Mr M'Neill commenced them a few years ago. He has already finished several miles, entirely at his own expence, (and

a heavy expence it is,) from Port-na-feaminn harbour to Killoren or Collonsay-house. He is to carry it on quite through the island. He has also, at a very great expence, built a quay in the harbour or creek just mentioned, which being the only safe landing-place in the neighbourhood, stood greatly in need of that accommodation. It is hard that such islands as Collonsay, which are by their physical position subjected to so many inconveniences, should also be branded by the legislature as unfit objects for its beneficence and liberality; and, instead of being helped to arise to a level with other more favoured districts, should be refused even their share of what justice prompts the government to do for many parts of the kingdom which have infinitely less need of it. *Collonsay receives no aid* from the fund destined to promote the improvement of roads and bridges, &c. in the Hebrides and Highlands of Scotland. No; the proprietor must build quays, he must clean harbours; he must erect bridges, and make roads;—in short, he must save and render comfortable the lives of his fellow islanders solely and entirely at his own expence; and without any more aid from the British legislature than if he were a subject of America or of France. Why? Because the island has not by nature the vast advantage of being a national thoroughfare.

This island makes from 120 to 160 tons of kelp in favourable years; and the proprietor acts as judiciously and humanely with regard to the manufacturers as their condition can possibly permit. The tides rise four or five feet higher here than in Islay or the opposite coast of Kintyre, which accounts for the Collonsay and Oransay shores being more favourable for kelp.

It

It has been already mentioned in another part of this work, that the women and girls of this island are encouraged by the proprietor's lady to spin and dress flax, as well as to weave it into linen, so that they have regular and profitable employment during the winter season, when many thousands of their countrywomen in the other isles are perfectly idle. This is highly commendable, and a great spring of Collonsay industry and improvement.

Great attention is paid to the parochial school. It was inspected by the reporter in summer 1808, and found to contain 78 scholars, of whom 14 were females. In other parts of the island 24 children are occasionally taught privately, as they are too far distant from the public school. This is a considerable number for a population of 860 souls. Divine service is rarely performed in the chapel here; Collonsay being part of the parish of Jura, is entitled to a visit from the minister, and to church service only once in three weeks or once a month; and owing to the precariousness and difficulties of the passage, the clergyman seldom does duty on the island above eight times per annum. Collonsay like Gigha, which is not quite so populous as it, ought certainly to constitute a parochial charge, and the minister to be paid in the same way as those other clergymen in our establishment, the tiends of whose parishes have been exhausted. The valued rent of Collonsay and Oransay is L.77. 10s. 8d.

It deserves particular remark, that Collonsay, standing insulated and detached at a considerable distance from any high lands which might afford some shelter to it from the fury of the Atlantic storms, shews some forest trees

trees of considerable size, while other islands in a more favourable position are totally destitute of wood. Near the house of the proprietor at Killoran, there are some very fine ash trees, and the larch, sycamore or plane, birch, and rowan trees, lately planted by Mr Macneill, promise to thrive tolerably well. Nothing can be a clearer proof of the possibility of rearing timber in all the Hebrides of any considerable size, by proper care and attention; and nothing can be more encouraging to such great Hebridian proprietors as have it in their power to commence a species of improvement which in half a century would quadruple the value of their estates.

The reporter has dwelt longer upon this interesting island than its importance in the eyes of a stranger may perhaps seem to warrant; but the facts already stated, and which are so new in a remote isle of the Hebrides, must be his apology. He traversed the islands of Collonsay and Oransay along with their proprietor, and for several days indulged in the pleasures which they afforded. Were his testimony of any weight with future agricultural travellers, he would advise them to see and study Collonsay,—were it interesting to the lover of ancient lore, who delights to tread on sacred ground, and to visit the scenes which early christianity has rendered so illustrious, he would request them to bestow many hours on the ruins, the beautiful crosses, and melancholy relics of Green Oransay;—and could his emotions inspire other Hebridian travellers with enthusiasm for the grandeur and heartfelt magnificence of nature, he would tell him,—Gaze on the panorama which a fine day affords from the cairn on the hill northwest of

of Collonsay house!—Reside for many days in Oransay, even though alone in that charming island, (perhaps the most sequestered in Britain,) examine its venerable relics of christian antiquity!—Look around on every hand!—Enjoy the view of mountains, seas, and rivers, in astonishing variety and contrast!—Contemplate the boundless Atlantic and the isles scattered over its bosom,—and, when satiated with solitary admiration and delight, return to the elegant, enlightened, and chearful hospitality of Killdran.

4.—JURA.

“DURAY.—Nairest that iyle (Gigha) layes Duray, ane ather fyne forest for deire, inhabit and manurit at the coist syde, part be Clandonald of Kintyre, part be Macgullayne of Douard, pairt be Macgellayne of Kinlochbuy, pairt be M^cDuffithie of Colvansay, ane iyle of twenty-four myle of length, lyand from the southwest to the northeist, twale myle of sea from Gigay above written, and ane myle from Ila, quhar is twa loches, sweetand uthers throughe mide iyle of salt water, to the lengthe of ane half myle, and all the deire of the west pairt of that forrest will be cabit be tainchess* to that narrow

* *i. e.* The deer are driven by persons drawn up in a line for that purpose, and terrifying them by their cries, &c.

narrow entry, and the next day callit west againe be tainchess through the said narrow entries, and infinit deire slaine there, pairt of small woods. This iyle, as the ancient iylanders alleges, should be callit Deirey, taking the name from the Deire innorne Leid, quhilk has given it that name in auld tymes. In this iyle there is twa guid and safe raids for schipps, the ane callit Lubnalierie, and the uther Loche Terbart, fornent uthers. The greatest hills in this iyle are chieflie Benchalis, Bensenta, Corben, Benannoyre in Ardlaylay; ane chappel sometime the paroch kirke Kiternadill. The water of Lasayther, the water of Udergan, the water of Glengargister, the waters of Knockbraik, Lindill, Caray, Ananbilley; all thir water salmond slaine upon them. This iyle is full of nobell coelts, with certaine freshe water loches, with meikell of profit."

Such is Dean Monroe's description of Jura in 1540-9, and the same applies to it still, with this difference, that it now belongs to two proprietors only, Mr Campbell of Jura and Mr Macneill of Collonsay, and that very little benefit is derived from its fresh water *locks*. However little the island may deserve notice in an agricultural report, in comparison with those which have been already described in this part of the work, yet it is so interesting in other respects that we cannot pass it over altogether in silence. Adjacent to Islay, and on the northeast of it, lies this long extended ridgy island, conspicuous over many districts by the height of its mountains. It is commonly computed 24 Scotch miles or 36 English miles in length and seven in breadth, but this is an exaggeration and more than double its real dimensions. On sailing repeatedly along its coast

at different periods, and comparing actual observation with the maps and charts in which this island occurs, the following dimensions appear to approach as near to the truth as the want of actual mensuration enables the reporter to state. Jura, from the southwest to the northeast extremity, extends 26 English miles in length, and is in some parts of the southern division formed by the two Loch Tarberts eight miles broad; but at an average of the whole breadth, and making allowance for the space occupied by those lochs, and by other bays of the sea, its breadth may fairly be fixed at $4\frac{1}{2}$ miles. This gives 117 square miles, or 58,500 Scotch or 74,880 English acres of superficial extent. Neither Dr Walker's conjecture, therefore, of 115,000 English acres, nor Mr Langland's map, appear to give a just estimate of Jura. The map prefixed to this work, and almost entirely corresponding with Arrowsmith's map, and with Mr Heather's chart, will be found by the traveller a pretty accurate one. Of these 58,500 acres, little more than one nineteenth part or 3000 acres are arable, *i. e.* under regular or occasional tillage. The old system of exhausting the ground by repeated white crops, without any regular rotation of grasses or of green crops, prevails. Excepting what Mr Campbell has done near his place of Ardfin, and a little near the minister's manse, no part of this island exhibits any symptoms of advancing agriculture. Mr McNeill of Collonsay employs his share of the north end of it entirely in pasturage, and under the sheep-farming system, and the other proprietor already mentioned passes his time in the ancient hospitable Hebridian style, without any innovation whatever. A road is carrying on from
Islay

Islay ferry to the north-east end of Jura ; which, it is to be hoped, will prove the signal for other improvements to the natives. They have a vast deal of improvable soil, with a fine exposure, the finest and wholesomest atmosphere in this whole region ; and considerable facility in procuring manures. With a little more industry, and the *advantage of leases* for their lands, as well as salutary regulations concerning their stock of horses, cattle, and sheep, they might soon follow the footsteps of their neighbours in Gigha, Islay, and Colonsay, and remove the reproach often levelled at them, of being a century behind the people of those well managed isles.

Considerable quantities of kelp, perhaps 80 or 90 tons, are annually made here ;—some fern ashes were formerly exported ; but of late years that manufacture seems to be abandoned, principally owing to the decrease and diminution of the material which yielded it. Many tons of the fine siliceous sand, which forms the bottom of some bays on the west side, were used for the glass manufacture ; but this is now no longer the case, that species of sand being found nearer the towns which formerly imported it.

Neither the crops nor live stock deserve any particular notice. They resemble those of the Northern Isles, and admit of great improvement. Potatoes, however, are cultivated with some care, pretty much in the same way as in Islay ; and they constitute four-fifths of the nourishment of the inhabitants.

The population was given to the reporter, from different hands, at 1300 or 1400 ; but he supposes, on good grounds, that this number is exaggerated, and that
it

it is, together with that of the islets belonging to the parish, what he states in the table for the united parish of Jura and Collonsay, deducting 860, the number in the last mentioned island. The church near the minister's manse was in a shameful state of disrepair in June 1808, having nine windows, and not *one whole pane* of glass in them, and being destitute of every accommodation suitable to a house of divine worship. The school was also in a neglected state at that time, but was expected to be speedily put on a more respectable footing.

There is abundance of limestone and of slates of the best quality, and lying near the sea shore, where a pier could easily be erected for loading and unloading vessels. These will no doubt prove eventually of great service to Jura, and conduce to bring it nearer the level of the other southern Argyleshire islands. But all that can be said on these subjects involves a change of system, of which there are at present no visible symptoms.

The mountainous ridges occupy the middle of the island, and run from end to end, rising still higher and higher as they run from the northeast, till at last they terminate in four peaked mountains of considerable height and of a similar shape. Two of these stand close together, and bound the westerly part of the island. They are the highest of all; and are well known by the name of the *Paps of Jura*, to all sailors who frequent the Denealedonian sea.

It is remarkable that, in their direction, the islands of Islay and Jura stand cross to most of the other Hebrides. The chain which composes the Long Island, the isles of Skye and Mull, and most of the others, stretch out south and north nearly, as do also the ridges

of their mountains, in the same direction with the coast of Scotland that is next adjacent. But Islay and Jura, with all their mountains, observe an opposite position, and extend lengthways only two or three points from east to west. Their position, however, is still the same with respect to the neighbouring coast of the mainland; as they run nearly parallel with the great promontory of Knapdale and Kintyre, which, like these islands, stands cross to the general direction of the coast of Scotland. The direction therefore of Islay and Jura, which appears at first sight to be contrary to the general rule, is no doubt the effect of the same cause,—of that great cause which made Britain itself run parallel to the coast of Scandinavia, and stretched out Madagascar in the same line with Africa,—of that mysterious law which seems to have subsisted at the formation of the earth, by which all the islands of the globe, in general, are extended in length in the same direction with the coast of the next adjacent continent*.

The height of *Beinn an oir*, the highest of the Jura mountains, and styled by Pennant ‘a vast cairn erected by the sons of Saturn,’ is, according to Dr Walker, 2340 feet above the level of the sea; but, according to Sir Joseph Banks, the second highest, or *Beinn-shianta*, which is confessedly 60 feet lower than *Beinn an oir*, is 2420 feet high. The other two of the principal mountains are much lower. They are called *Beinn à chaolais*, and *Corro-bheinn*, i. e. the mountain near the Sound (of Islay), and the rugged mountain. *Beinn an oir*

* Vid. Dr Walker's Essays on Natural History, &c. p. 220.

oir means the *golden*, and Beinn-shianta the *enchanted mountain*. The prospect from the summit is highly grand and delightful; not so much in consequence of the altitude of the spectator's position, as of its insulated and peculiar situation. On the one hand, he has a thousand hills, the whole Alpine county of Argyleshire, the ancient Albion. Here alone is his view intercepted, and that only by mountains at the distance of nearly 50 miles. In another quarter, he sees distinctly the whole range of the Hebrides, and a great space of the Deucaledonian sea. Southwards, the vast promontory of Kintyre lies under his eye; and south by west, the humble, but lovely Islay, with her numerous lakes and charming pastures. Beyond the promontory of Kintyre, the west of Scotland rises to the great mass of mountains in the head of Clydesdale and Nithsdale: in another view, the spiry summits of Arran, and the Irish Sea, with its shores, to the Isle of Mann. From the south to the west, the coast of Ireland lies like a plain, with here and there a faintly delineated hill, as far as the eye can reach. The impetuous strait between the Mull of Kintyre and the Fairhead, with its lofty cliffs, is quite at hand, through which the Irish Sea is filled every tide by the pouring in of the Atlantic. The promontory of the Giants Causeway appears near and distinct; and beyond it the high land of Innishuna, the northern extremity of Ireland; beyond this to the Hebrides, nothing but air and ocean. North-westward, appears the rugged Mull*,

T t 2

with

* Proverbially styled Muille na m' Beann fuar, i.e. Mull of the cold chilly mountains.

with Benmore towering to the same height with the spectator, and enveloped in clouds and darkness. Farther still, and in the same magnificent panorama, he discerns the stupendous Cuillin mountains of Skye, and in the Western Ocean, in various directions, Collonsay, Oronsay, Jona, Staffa, Coll, Tyree, Barray-head, and the hundred isles floating on the vast expanse.

The emotions in his mind, arising from the grandeur of this scene, are not to be excited by any description. The extent of prospect from this mountain is indeed surprising, not much under 220 miles south and north. But the curvature of the earth is greatly overcome by the elevation of the spectator, and the height of the distant lands. Nothing else could render the Isle of Skye and the Isle of Mann at the same time visible. At three such views, the naked eye might extend very nearly from the one extremity of Britain to the other. To stretch the eye over so many different seas,—over such a multitude of islands,—and such various countries, in what were once different kingdoms, is perhaps a scene that can nowhere be beheld in northern Europe, but from the highest summit of Jura. It cannot indeed be compared with what Brydone describes from the top of Mount *Ætna*, or perhaps with a few select spots on the northern coasts of the Mediterranean Sea; but it certainly richly merits the trouble which it costs to obtain it, and never fails amply to reward the labours of the enlightened traveller.

Northwards of Jura, in the passage or strait between it and Scarba, is the famous whirlpool of Corrybheac-cain,

cain*, the theme of many a pathetic song and the terror of the Hebridian mariner. The sound is about a mile broad where narrowest, and the whirlpool is on the Scarba side. Soon after the flood has entered the sound, the sea at this place appears in great disorder. It boils, foams, and passes away in successive whirls. The commotion increases till near the fourth hour of flood, when it is most impetuous. It then boils as it were from the bottom, and throws up every thing that is moveable by water. The waves are tossed up with a loud roar, which is often heard six or seven miles off,

T t 3

and

* Of this whirlpool Dean Monroe writes as follows; "Betwixt thir twa iyles ther runnes ane streame, above the power of all sailing and rowing, with infinit dangers, callit Corrybrekan. This streame is aught (8) myle lang, quhilk may not be hantit bot be certaine tyds."

Monsieur D'Arfeville, who published in Paris, in 1546, the Navigation of King James V. of Scotland round the Hebrides, writes upon Corrybhreaccain as follows; "Betwixt Scarba and Dura, there is the most dangerous tide in Europe, because of contrary tides which encounter there, and run betwixt the Mule of Kintyre and Ila, and, passing thro' a strait channel, it runs with such violence upon the coast of Scarba that it is thrown back upon the coasts of Dura with a frightful noise: In returning, it makes a deep and roaring whirlpool, which hinders all ships to enter: If they unluckily get in there, they are in great danger of being dashed in pieces; but the safest time to pass that place is, either when the water is at the highest flood or lowest ebb. This passage is commonly called *Corrybrekin*."

and to such a height that they fly broken from it and white for some miles before they are dispelled. At this period, the Hebridian says that the old Hag has put on her white kerchief as a decoy for strangers, to lure them to their destruction. It is indeed generally fatal to approach the gulf at this period of the tide; but from the middle of the fifth hour till the sixth of flood, and in neap tides from the fourth to the sixth, the commotion gradually abates, until at length it totally subsides, and the smallest boat may pass with safety, if the weather be tolerable. Soon after the return of the ebb, however, the same violence is repeated, increasing and diminishing at corresponding times, until the approach of the lowest ebb restores the same tranquillity as takes place at high water.

The inhabitants of the neighbourhood tell many marvellous stories about the attracting powers of this whirlpool, its irresistible fury, and many hair-breadth 'scapes made by themselves and by others, after being considered as irretrievably lost: but these merely prove the popular terror of this tremendous whirlpool.

The *causes* of the phenomenon we may partly learn from the map, which points out the necessity of a strong current at this place, and partly from studying the strata of rock on each side, and especially the Scarba side of the sound.

There seems to be a ledge of submarine rocks standing in the course of the current as it rushes through the narrow sound in question. The opposition given by this ledge may occasion those whirlings in the water, its rising from the bottom, and the breaking and throwing up of the waves, which always happen in the most forcible

forcible manner during the highest spring tides, and when the current is in its greatest strength. It likewise accounts for the smoothing surface when the current is at its height, when the ledge becomes covered with such a depth of water as renders the opposition which it gives to the current below imperceptible above. But it accounts not so well for the same smoothness at the lowest ebb; although the want of current, or at least the vast diminution of its force, must, both at high and low water, be taken into consideration. There is a safe harbour in Jura, within six miles of the Sound of Islay, called the Harbour of the Small Isles, and a roadstead, called Lowlandman's Bay, several miles to the northward.

The great desideratum in Jura is *inclosures*, implying a subdivision and regular appropriation of lands among the tenantry. But, indeed, many things are to be begun in this island, and very little can at present be said in its favour in an agricultural report. It is a fine subject for improvement, and may soon be brought to triple its present value, both in point of arable land, and of food and pasturage for live stock; and its population may be greatly enriched by turning to account its natural treasures of excellent manures, as well as its mosses and its minerals.

5.—9. SCARBA, LUNGA, LUING, SHUNA, SAOIL.

THESE islands are valuable, and of considerable population and extent; but although pretty well cultivated, especially Luing and Saoil, they cannot be long dwelt upon in a report of this kind. They contain nearly 5000 acres of arable land, and might in many parts be profitably occupied by woods and plantations. Scarba would be a fine forest, and in fifty years richly repay the expences of plantation, and the charges consequent upon them. Shuna, the property of Colonel Macdonald of Lyndale, in Skye, has excellent limestone; and the proprietor has built a quay, and made a road, at his own expence, for accommodating the public with that valuable article. Until, however, the common tenantry in the Hebrides come into the practice of using lime for manure, and for other purposes unknown to them at present in this district, all liberal efforts of the kind alluded to will meet with many obstacles. The same holds true with respect to the slates and other minerals of those isles.

9. RISDALE.

THIS islet, of about 50 acres of surface, was famous, even in Monroe's time, for its slates. He says, that there is "abundance of *skalzie* (slates) to be win ther." The greater part of the island, above high-water mark, has, in the course of ages, been removed, to shelter the dwellings of many millions of our species. At present three quarries are wrought under the sea-mark or level, to a considerable depth; and the water is pumped out by machinery at a heavy expence. The island belongs in property to the Earl of Breadalbane; but the slate works are carried on conjunctly by his Lordship and Mr John Campbell, writer to the signet, of Edinburgh.

The number of quarriers in July 1808 was, 257 including 33 old men, who were superannuated and employed on lighter work than quarrying. The quarriers have numerous families, and live in a neat little village on the islet, which is separated from the much more extensive island of Saoil by a narrow strait, navigable at high-water, but scarcely 30 yards broad in the narrowest part. Between the village and the opposite shore of Saoil, where is also a small village and an inn, is the anchorage ground for vessels which carry off the slates. Such was the demand for them at that time, that 13 large sloops and 2 brigs were waiting for cargoes, which they did not expect for six or seven weeks. At
other

other times, however, vessels are supplied without any delay or detention.

The slates are of different sizes and prices:—

Slates,	Inches long.	Inches broad.	Sh.
Full size, viz. from 9 to 18, and 6 to 14=	\$5. p. 1000.		
Undersize, viz. 6 12, 4 6=	12. 6d. do.		
The weight of 1000 full size is 1½ ton nearly, and that of 1000 under size is about 1 ton.			

The duty payable is *ad valorem* at the place of importation—or a certain per centage upon the price of the slates when delivered at the customhouse of the port to which the vessel is bound.

The quantity of slates made by the Eisdale Company in the six following years, was

	<i>Large size.</i>	<i>Small.</i>
In 1802,	4,048,100	812,100
1803,	3,376,700	915,200
1804,	4,076,700	670,300
1805,	4,626,300	740,500
1806,	4,237,600	1,262,600
1807,	4,530,300	1,821,800

The value of the slates shipped off in 1807 was L. 9066. 12s. Sterling.

This quantity is very considerable, and annually on the increase. The rock will last upwards of 20 years longer, without increasing the expence to a very alarming degree for pumping, &c.; and there is abundance of slates for the consumption of all Europe to be quarried in the neighbourhood. Mr E. Stevenson of Oban has the quarry of the little islet of Belnahuagh, "*Quharin*,

(as

(as Monroe says,) *there is fair skailzie* (good slates) *aneuche*." He employs from 26 to 42 men, and exports considerable quantities.

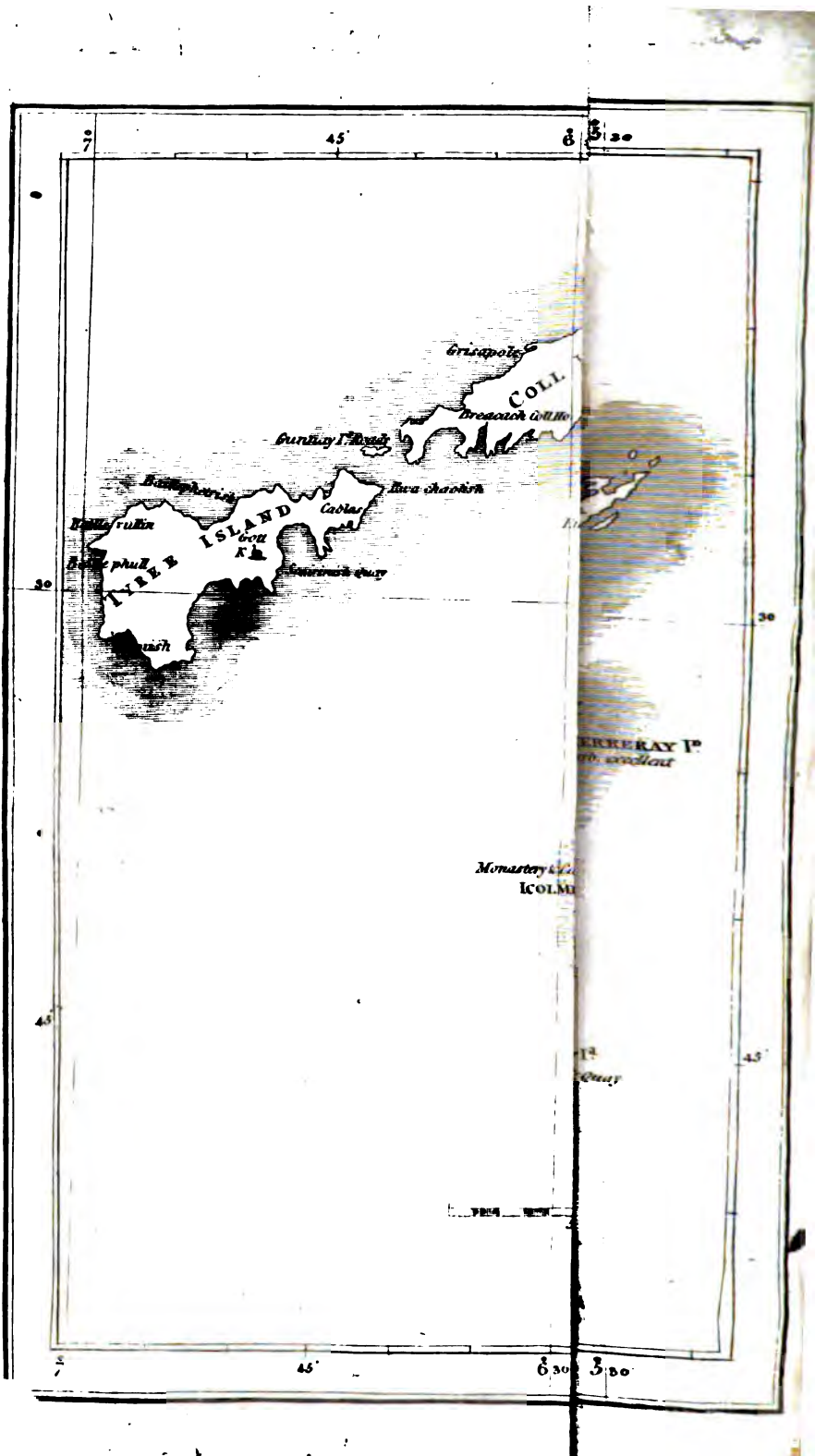
The quarriers are paid a certain sum per thousand, by the company, for what slates they make and ship; and their earnings depend very much upon their own skill and the quality of the piece of rock upon which they happen to be employed. Their annual earnings fluctuate from L.28 to L.45 Sterling. Most of them are married and have numerous families. The period of apprenticeship for a quarrier is three complete years. He pays all expences connected with house, tools, boats, &c. and has nothing to depend upon but what he earns for his slates. The quarriers are remarkably healthy, and seldom experience any fatal accidents; a surprising circumstance when we consider the nature of their occupation, and their frequent use of gun-powder in blasting the rocks.

They have a society-school on the island, which is attended by all the children of a certain age, and seems to be well managed and useful. A society-box, to which each quarrier pays one shilling annually, furnishes relief to their widows and sick labourers, and grants occasional aids to the poorest families. A surgeon is paid an annual salary half by the Company and half by the quarriers, who pay him for his particular trouble and medicines over and above. There is a smith, a shoemaker, and a wright, paid by the Company; but for their particular work on behalf of the quarriers individually, they pay them themselves.—Upon the whole, this establishment is very decent, useful, and orderly, and reflects credit upon the Company to whom

whom it belongs, and upon the men employed in it. Mr Macintyre, clerk to the Company, obligingly accompanied the reporter during his survey of this important little island, and proved, as most Hebridians have done, very intelligent and polite.

10. KERRERAY.

THIS island is remarkable merely for its excellent grazings, and the good stock of cattle kept upon it by a very enlightened and active tenant. It forms, together with the opposite coast of Lorn, the safe and romantic harbour of Oban, to which so many travellers resort on their way to Staffa and Jona. The village of Oban owes much of its prosperity to the enterprising spirit of two brothers of the name of Stevenson, who have for many years past carried on business there greatly to the advantage of the district and of the adjacent Hebrides, as well as to their own credit. They are men of very extensive acquaintance with the world, and universally known over the west of Scotland for their liberality in their commercial transactions, and their genuine hospitality and elegance of manners.



11. MULL.

(*Dean Monroe, A. D. 1542.*)

"MULL—Twelve myle northward fra the iyle of Colnansay lyes the ile of Mull, ane grate roughie iyle, noch the les it is fertil and fruitfull. This iyle contains in lenth from the northeiest to the south weste twenty four myles, and in breid, from the east southeist to the west norweste uther twenty four myles, with certaine woodes, maney deire, and verey fair hunting games, with maney grate martines, and cunnings for hunting, with a guid raid fornent Colmkill, callit Poll-ailse. Ther is sevin paroche kirkes within this yle, and thre castles towit the castell of Doward, a strenthey place, bigged on a craige at the sea-syde: the castle of Lochbowy, perteining to McGillayne of Lochbowy; the castle of Aroze, quhilk in former time pertinet to the Lord of the Iyles, and now is bruiKET be Macgillayne of Doward. In this iyle ther is twa guid freshe waters; ane of them are callit Ananva, and the water of Glenforsay, full of salmond, with uther waters that has salmond in them, but not in sic abundance as the twa foresaid waters. This iyle hath alsa salt water loches, towit Lochear, ane little small loche, with guid take of herrings: this loche layes in the southweist of the country. Then is Lochfyn quherin ther is a guid take of herringes. Northweist fra this loche layes loche-sea-forte guid for the herringe fishing. Lykwayes, on the

on the east pairt of the countrey layes ane loche callit Lochepetit. Narrest this loche in the south southweist layes Lochbowy, a fair braid loche, quherin ther is grate take of herringes and uther fishings. As also within this iyle ther is twa fresh water loches ; the ane is callit Loche Strathsenaban, with an iyle in it, callit by the Irishe Ellan Strathsenaban ; the uther freshe water loche is callit Lochebaa, with an iyle therein. This iyles are baith strengthe and inhabit. This iyle perteins pairtly to M^cGillayne of Doward, pairtly to M^cGillayne of Lochebow, pairtly to M^cKinnoo, and pairtly to the Clandonald of awld. This iyland layes bat four myle from the firme land of Moriwarne." Buchanan and Martin communicate nothing worthy of notice concerning Mull. The former merely translates a part of Dean Monroe's description ; and the latter seems to have taken a very desultory and superficial view of it. He says that Ulva Isle is about three miles in circumference ; whereas it is at least 20 miles, &c. Some circumstances in Monroe's account deserve notice. It appears that Mull had, in his time, a great deal of wood ; and that most of its salt water inlets were full of herrings. At present the woods have almost wholly vanished ; and Mull is by no means favoured with frequent visits from herring shoals ; on the contrary, it is very seldom that any appear at all in its lochs. The names of the Lochs have changed in an unusual degree since Monroe wrote ; but this may have taken its rise from his careless spelling and defective pronounciation, or from his transcribers having mistaken his letters : as, for instance, in writing the word *Lochepetit*, which
is,

is evidently meant for Loch-spelebh, and pronounced *Lochespelive*. Although *fertile* and *fruitful* in the beginning of the 16th century, Mull does not, in the 19th century, yield half the meal consumed by the inhabitants. It is, indeed, difficult to conceive how they subsisted prior to the introduction of the potatoe plant. In 1542 there were seven parishes; in 1809 only three!!

The island of Mull, in size the *third* of the Hebrides, is of a very irregular form; and so much indented by arms of the sea, that, although its greatest diameter does not exceed 35 English miles, its circumference, following the high sea mark, is upwards of 300. Extensive as it is, its dimensions are generally grossly exaggerated both by the natives and by strangers. These say, carelessly, that Mull is 24 Mull miles, or 36 English miles long, and as many broad; which would give a square area of 1,296 miles, or 648,000 Scotch acres; or about triple its real dimensions. The extreme length of the island is from west and by south, to east and by north, viz. from the Sound of Icolmkill to the point of Dowart, opposite to the southern extremity of Lismore; and its greatest breadth is from the northern extremity and over the summit of Benmore, cutting the former line at the head of Loch-laich, to a point below the farm of Scourr, in the Ross or southern division. The former is 35 English miles, and the latter 30. In some places, however, the breadth is only three or four miles, so that we may fairly calculate the average breadth at twelve miles. This gives 420 square miles, or 210,000 Scotch acres, as the superficial contents of the isle of Mull.

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The surface is, upon the whole, rough and unpromising; though, at the same time, some very fine spots occur now and then in the sheltered vallies, and at the heads of the salt water lochs, with which the island abounds. The soil is generally light, thin, and gravelly, the decomposition of whin, basalt, schistus, or granite. It is rather singular that the last mentioned should yield the most fertile soil in Mull; but this is really the case, as we find on examining the district of Ross in the southern extremity of the island.—What soil there is in the sheltered spots is sharp and pretty fertile; but it is so thin and light that corn crops cannot possibly be raised to advantage, without the most careful cultivation, and abundant manures. Mull is, indeed, chiefly calculated for grazing, and can never make so good a figure as Islay and some of the more favoured Hebrides, as an agricultural island. Green crops and grasses may certainly be raised in some perfection; but the country must always import considerable quantities of corn; and, while its population continues to increase as it has done of late years, it will occasionally be subject to severe distress in unfavourable seasons.

The following was the state of the population in 1801, viz.—

<i>Parish.</i>	<i>Inhab. houses.</i>	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
Kilfinichen . . .	480	1,698	1,712	3,410
Kilminian	695	1,735	1,866	3,601
Torosay	328	811	953	1,764
		<hr/>	<hr/>	<hr/>
		1,508	4,244	4,531
				<hr/>
				8,775
				In

In 1800, the numbers were, as nearly as could be collected, 9,220 souls—of whom the females exceeded the males by one-eighth. An emigration took place to America, but it did not essentially affect the island's population.

The number of black cattle in Mull is usually stated at 8000 head, of which one-fifth, or 1600, are annually sold, and about 1300 are exported by the ferry of Ach-na-craig out of the island. These, with the 700 head from Coll, Tyree, and Ulva, make up the 2000 head of black cattle which are known to be yearly sent by that ferry.

The black cattle of the Isle of Mull are known to be one of the hardiest breeds in Great Britain. They are small, but very clean-boned, handsome, well-clad, and feed kindly and fatten rapidly. They travel with astonishing vigour, and are sometimes seen in the south of England, a few days after a journey of 700 or 800 miles, fully fatter than when they left home. They accordingly sell well, sometimes greatly above their marketable weight, at the current prices at the moment of purchase.

Of late years some proprietors and farmers in this island have paid great attention to the amelioration of their stocks of cattle, by adopting the Islay and Collonsay plan of enlarging the size and improving the shape of their cattle, by careful selection of breeders, and the importation of handsome bulls. Mr Macdonald of Staffa, who has a considerable estate on the mainland of Mull, besides the islands of Ulva, Gometra, &c. in its vicinity, has been at much pains in this respect, and has succeeded accordingly. Mr Maxwell, above men-

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tioned,

tioned, has a very good stock, which is annually improving; also Colonel Maclean at Scourr, Mr Maclean of Pennycross, and many other Mull gentlemen, advance rapidly in similar improvements.

The stock of sheep is of late become considerable, and amounts to 18,000, of which one-fourth, or 4,500, are annually sold. The sum drawn by Mull for its sheep and cattle may be valued at L. 12,000 per annum, which is somewhat more than the rental. Since the late convulsions on the continent commenced, and especially since the suspension of our direct intercourse with Russia, the high price of kelp has been such as to invite every proprietor in Mull to attempt the manufacture of it: in consequence of which, about 600 tons are made at an average around this island. The clear gain of that quantity has, for six or seven years past, been L. 6000 per annum. There is no other article of export worthy of particular mention; for although the inhabitants of Mull have abundance of spare time upon their hands, and although they are naturally as acute and sagacious as their neighbours, they have no species of manufacture, and no branch of industry established among them. They are indeed (with the exceptions hereafter to be made) greatly behind the natives of Islay, Collonsay, and Gigha, in industry and wealth; and a stranger, on landing in Mull from these islands, would imagine the inhabitants to belong to a different nation. The number of proprietors varies very frequently, owing to obvious causes: it is at present 12; but the Duke of Argyle possesses very nearly one half of the island. The valued rent of it and the nominal subdivision are as follow: viz.

Parish.

<i>Parish.</i>	<i>Val.</i>	<i>Rent.</i>	<i>Penny Lands.</i>
Kilfinichen, L.	207	6 6	87½
Kilninian,	329	3 0	109½
Torosay,	208	2 4	56½
<hr/>			
Total	L. 744	11 10	

The valuation was very low in proportion to the rental even 60 years ago, and is now to the gross rent of the island nearly as 1 to 17 ! Of course, some of the public burdens are very light, and the means of religious and moral instruction must be scanty.

One of the most essential improvements made in Mull of late years is, the introduction of sheep as farm stock instead of black cattle, and of a superfluity of horses. The black-faced, or Tweeddale breed, seems to be the favourite, although on some of the low lying farms, the Cheviot breed thrives pretty well. Mr Maxwell of Aross, one of the most active and intelligent men in Mull, or indeed in the Western Isles, was, in 1808, of opinion, that the climate of Mull is too rainy and boisterous for the Cheviot sheep, which are usually observed to run towards the sheltered spots near the sea shore in rude weather, and to be unable to scramble for their food through the higher and the rugged grounds. They are, as we formerly remarked, more delicate at the lambing season than the Tweeddale sheep; the lambs are dropped almost perfectly destitute of wool, and hundreds die from cold; while the black-faced lamb, being better clad, is able to follow his dam while she ranges for food: he thus contributes to save his pa-

rent as well as himself at that critical period. The vast difference in the value of the fleece is therefore counterbalanced by the superior facility of rearing the black-faced sheep; and that species will of course very probably prevail for many years in the more exposed and less cultivated Hebrides. Mr Maxwell has (like Mr Maclean of Coll) commenced the very essential improvement of regular inclosures and the cultivation of green crops in Mull. He has also of late been at great expence in top-dressing his grass parks with shelly sand, brought from a distance of many leagues by sea, and spread carefully over the surface of his grounds. For thin, mossy, or gravelly soils, this is perhaps the most effectual of all manures.* It is in vain to attempt raising white crops on them. These exhaust, without yielding any returns which might compensate for the loss of their pasture. In a very rainy island, like Mull, it is questionable whether green and grass crops be not the only eligible produce of thin soils, and whether any corn should be tried on them at all. In the district of Ross, however, and near Dowart Castle, there is a considerable extent of level ground, of no bad quality, and white crops fully adequate to the consumption of the island may, in the course of time, be raised upon them.

Mull (though sheltered on its eastern shores) yet standing as a bulwark to the great glen or vale of Scotland against the tempests of the Atlantic Ocean, and fencing a large portion of the county of Argyle from the

* Vide p. 326.

the vapours of that turbulent element, is perhaps, upon the whole, the most boisterous of all the Western Isles. Lewis is indeed much exposed, but its mountains are not so high, and its shores are not so bold as those of Mull. The Isle of Skye is equally elevated and majestic with this island, but it is somewhat defended by the range of the Uists and of Harris from the western storms. In consequence of this unfavourableness of climate, Mull will gradually come under the sheep farming management, and its population will probably be more stationary than that of the neighbouring isles. Wood ought to be extensively raised by the proprietors, and, indeed, might in time prove the most valuable staple of the island. The vallies, and even the hills which have an eastern exposure, are perfectly well calculated for the growth of timber, as appears from the native trees which are still left, and which consist of oak, plane, birch, alder, and mountain ash. Willows of different sorts might be reared with vast advantage, and prove a great source of prosperity to the island.

Mr Maclean of Coll has of late planted a very considerable quantity of trees, chiefly larch and Scotch firs, upon part of his estate of Quinish in Mull. Although it lies in the north-western end of the island, and by much the most exposed district of it, these trees succeed astonishingly. The larches thrive, upon the whole, as well as in any of the isles, and the Scotch firs, which did not for the first three or four years promise much good, have afterwards recovered their strength, and now thrive on ground to the height of 700 feet above the level of the sea, and, indeed, in some sheltered spots, to that of eight or nine hundred feet.

This is the first serious attempt at planting in the north of Mull, and it does great honour to the active and patriotic proprietor. He will afterwards increase the proportion of hard wood or timber, such as oak, ash, elm, plane, &c. and extend the cultivation of willows to an indefinite length. So sensible is he of the advantage to be derived by the island, and by the public from prosecuting the plantation of trees, that he allows no difficulty or obstacle to prevent him from adding, on every conceivable opportunity, to the quantities which already beautify and shelter his estate.

On the same property he has laid out considerable sums of money in making inclosures, and he has subdivided and allocated the lands to the tenants individually in the same way as is done in the improved islands. In consequence of this management his tenants thrive, and that district of Mull rapidly advances in civilization and in agricultural improvements.

The village of Tobermory, being a late erection, and the third in point of importance in the Hebrides, deserves particular notice in this place. It was begun under the auspices of the British society for the encouragement of manufactures and fisheries, and of the late Duke of Argyle, in 1789, and the mode of building, &c. was arranged in the following way :

London, May 1789.

*Regulations for building and lotting land at Tobermory
in the island of Mull.*

1. That the plan of the town of Tobermory, as laid out by Mr Maxwell, in his plan marked No. 1, is approved of.

2.

2. That the street or row which is to front the harbour be called *Argyll Terrace*, and the street immediately behind or parallel to the said terrace be called *Breadalbane Street*.

3. That the said two streets be immediately laid out, and that nothing be sown or planted on the ground to be occupied by the said streets, nor within 25 feet on each side thereof, in order that there may be no impediment to settlers establishing themselves there this season. That if any crops are already laid down in the streets or adjacent ground ordered to be left vacant, the society will indemnify the owners of the said crops for any loss they may sustain by the society's agent removing the same, which he is ordered to do if necessary.

4. That the land shall be lotted out to all persons willing to build houses thereupon, at the rate of one penny per running foot in front of the street, by 80 or 90 feet deep; which, if 80 feet, will be at the rate of fifty-four shillings per acre, and if 90 feet, at the rate of forty-eight shillings per acre; but that the lots on *Argyll Terrace* shall be let at 2d. per running foot in front, as being the most eligible situation, and the most proper for the best houses.

5. That the said lots shall be granted on leases of 99 years, renewable for ever on paying one years additional rent.

6. That the low ground near the quay shall be lotted for the same term of years, but at the rate of 6d. per running foot from the front of the quay to the top of the brae or bank behind the quay; and that no person shall be allowed to build there, excepting on condition

of his building a house not less than two stories with a slated roof.

7. That those who take a lot in the town shall also be entitled to a part of the arable land lying contiguous thereto, not exceeding the sixth part of an acre, for garden and potatoe ground, on a lease of nineteen years, and also to a quantity of uncultivated land not exceeding five acres, without a special order by the directors, upon a lease for the life of the lessee, or for thirty years if he should not live so long; which leases of arable and also of uncultivated land shall be subject to conditions of improvement, to be settled with the society's agent at Tobermory.

8. That every inhabitant shall have a right to dig peat for his own use in any of the society's mosses, and also to a summer's grazing for a cow on the muir land of the society, on paying a sum not exceeding 7s. 6d. per annum for the above privilege, and may also dig and carry away, for their own use, stone and limestone *gratis*, or for the use of any other inhabitant, from any of the society's quarries, subject to such restrictions as may prevent injury to the quarries and mosses.

9. That the rule for lotting shall be to give the preference to the persons who first applies for a lot, and if more than one apply at the sametime, to decide the preference by lot.

10. That in order to encourage the building of houses, the society will lend at the legal interest on the security of any house that shall be built, the sum of ten pounds Sterling, provided the house shall have cost twenty pounds; and so in proportion any lesser sum to the extent of *fifty per cent.* of the value of the house.

This

This money not to be lent till the house shall be completely built and habitable, and to be repaid either at once, or by instalments within the space of ten years.

11. That no more than five hundred pounds in all shall be lent out by the company in this manner at Tobermory, till the society shall have an opportunity of knowing the effect of this experiment.

19. That if no building shall have been begun on a lot within eighteen months of the day of its being taken, the lot shall be considered as relinquished by the taker, and may be let to any other person; the original taker being always understood to be liable for the rent to the society till the lot shall be so let. That each lot shall have a dwelling-house or houses, shops, or warehouses built upon it, along the whole line fronting the street, in which line no stable, byre, out-house, or peat stack, shall be erected; and that no more than sixty feet in front to the street shall be granted to any one person, without a special order by the directors of the society.

Tobermory has increased in population, although not in resources, of late years, as is proved by the following note from the schoolmaster of that place:—
 “About seven or eight years ago, I was ordered by Mr McArthur, minister of this parish of Kilninian, to make out an exact and correct list of all the inhabitants of the village of Tobermory, in order to lay the number before the presbytery of Mull. They then amounted to 456 souls, and since that time (*between 1801 and 1808*) they have increased to 516 souls, of whom 247 are males and 269 females. The number of families

families is 89, which gives very nearly six individuals to each family. As there is no regular employment or occupation for them, they are generally poor and indigent. They occasionally engage themselves to the herring business in time of the fishing, which is their principal source of maintenance for the rest of the year. But as the herring fishing has proved bad for six or seven years past, very few of the inhabitants have been employed, and their wages have been low also. Such of the inhabitants as have crofts of waste lands from the British society, have made very great improvements upon the portions of ground allotted them, insomuch, indeed, that their lands are now worth upwards of a *thousand pounds Sterling* more than they were when they got them; but the produce of them is very far from being an adequate support to the people of the village. Tobermory, from its local situation, might become a good nursery for seamen; and also, on account of its command for running water, might have cotton mills, flax, and paper-mills erected in it with advantage. Labour is cheap, and the place is in the neighbourhood of extensive sheep farms, so that woollens might also be tried with a probability of success. All these improvements would be facilitated by the peculiar advantages of Tobermory, which lies in the tract of shipping, and is one of the finest harbours in the world. My scholars amount to the number of 57, of whom 14 are girls. They learn to read the Galic as well as the English language, and their parents in general behave very well towards them and myself.

(Signed) JOHN M^CVEAN."

There

There are eleven registered vessels, regularly manned by 29 men, and amounting to 278 $\frac{1}{2}$ tons burden, belonging to the port of Tobermory; and besides these, about 28 open boats, with three men each, usually employed in the fishery. The village has therefore a large proportion of seamen (113) belonging to it, and proves extensively useful to vessels passing this way, which chance to stand in need of an addition to their crews. The number of vessels entering at the custom-house inwards in 1808 was 58, and that of those clearing outwards 78: The whole number entered was 136.

While it must be confessed that, in an agricultural point of view, the island of Mull yields but little matter for inquiry, a few improvements lately carried on upon the Duke of Argyle's property in Ross district deserve particular notice. Some farms near the sound of Icolmkill, in the south-western extremity, and especially one called Creach, had long been remarkable for the poverty and indolence of their occupants, who were constantly in arrears even for the miserable nominal rents put upon their possessions. These farms were held by two or three tenants *in common*, as was formerly the case over all the Hebrides, and is still to be seen on most of the Northern islands. A few years ago, the lands in question were subdivided among small tenants, each family having a specified quantity of them, both of arable and pasture ground, set apart for itself, and being bound to inclose, drain, and otherwise gradually improve their tenements. The rents were still kept moderate, though more than double what they had formerly been. The consequence is, that these farms have now the best crops, the best cattle, and the wealthiest
tenantry,

tenantry, of all those of the same description in Mull, and that the lands are at least worth double the sum which they were when the subdivision and appropriation took place.

What renders the case of the farm of Creach particularly worthy of notice is, that although two or three families, with their servants and dependants, could not, under the old system of management, pay the small rents of their lands, 25 families, amounting to 142 individuals, now subsist comfortably on the farm, and pay from five shillings to one guinea per acre of yearly rent for their possessions. The quantity of ground in the occupancy of each family depended upon its value at the period of giving the leases, and was from five to nine Scotch acres. The farm in question is worth seeing, in this part of the kingdom, although in many other districts it would perhaps attract no particular regard.

The other proprietors of Mull, especially Mr Maclean of Coll and Mr Macdonald of Staffa, act upon similar principles of subdivision and improvement; and they clearly perceive the salutary consequences, both with respect to their tenants and estates.

Mr Maclean of Coll laid out ground for a village in the northern end of the island already mentioned some years ago: he gave each settler a stance for a house and garden upon a lease of 95 years, and a piece of ground of from two to four acres, with a lease of 20 years, as croft lands, with the privilege also of grazing a horse and cow on the pastures of the estate. All the lots were soon exhausted, and there was a great demand for more; but as there was no good fishing station in the vicinity, and as the resources of the district were, in every

every point of view, extremely limited, he did not think it advisable to grant more lots than would accommodate a few tradesmens' families, and those of such labourers and artisans as were best calculated for the improvement of the country, and most likely to earn their own subsistence in a comfortable way. He has had the satisfaction of seeing this humane and truly benevolent plan succeed beyond all expectation. The settlers are in comfortable circumstances themselves, and conduce very conspicuously to the improvement of Mr Maclean's estate, and of the district in which they live. In seasons which proved distressing to a large proportion of their countrymen, they maintained their families, and followed their usual avocations, with more ease than any of their neighbours; and they are distinguished by the neatness of their tenements, and the systematical industry and regularity of their conduct.

Although some roads and bridges have been made in Mull, and its ferries for communication with the continent of Scotland are not remarkably bad in comparison with those of the other isles, yet the want of roads and bridges, and the deficiency of ferry conveyance, are most severely felt by the inhabitants. It has been already mentioned that there is no road from Achnacraig to the Ross, the most fertile and populous district of the island.* The improvement of that district must of course be retarded, until the great preliminary one of *easy access* shall take place. This extensive island indeed requires 200 miles of roads, in different directions,
before

* Vide supra, p. 98.

before its agricultural improvements can proceed with vigour and success. The little jealousies and animosities of neighbouring or rival proprietors must be laid aside; the puny schemes of the selfish, avaricious, and unenlightened must be brought to yield to the better views of the liberal minded; and private accommodation or interest must bend to the public good. In the island under review there are many patriotic and truly public spirited gentlemen; and it is to be hoped that their efforts will speedily prevail over the chilling policy of their less enlightened neighbours. More might be said on this subject; but it is enough that the principal persons connected with Mull should (as they seem to do) perceive clearly the evils with which they have to contend, in order to procure the most complete and radical redress.

The minerals of Mull have not as yet been turned to any account. There are, however, vast quantities of granite, freestone, marble, limestone, pebbles, and some veins of coal in different parts of the island. Some attempts were made, nearly 30 years ago, to work the coals at Beinn-an-aonidh in the Ross district, but they failed;* and it is not likely that they shall soon be resumed. There are vast quantities of peat-mosses in Mull, but yet the difficulty of securing fuel is one of the greatest natural disadvantages with which its inhabitants have to contend.

The breed of horses peculiar to this island, or what is at least supposed so, and called the Isle of Mull breed, is

* Vide supra, p. 30.

is, like that of the black cattle, extremely valuable on account of its hardiness and durability. The story of this breed having been improved by horses belonging to the Spanish Armada in 1588 seems indeed to be a fable, but yet the natives frequently mention it, and reckon it a good foundation for the extravagant prices which they ask for their horses.

Goats are still kept on some farms, but they gradually diminish in numbers, and will probably disappear altogether in the space of a few years.

Hogs are kept in considerable quantities, and yield an article of exportation and profit, especially near the different harbours and road-steads.

Caverns of stupendous dimensions abound in various parts of Mull, especially in the Gribon district on Mr Macdonald of Staffa's property. The lovers of natural scenery will indeed find abundant scope for their admiration, and the grandest objects for their pencils, along the bold and magnificent shores of this huge island.



12. ULVA AND GOMETRA, &c.

These, although unaccountably omitted by Dean Monroe, are by much the most extensive and valuable of the numerous islands which are found embayed in the bosom of Mull on its western coast; and which are, in general, more rich and fertile than their parent isle.

Some

Some violent concussion seems to have detached them from Mull; for their minerals, fossils, and natural productions, as well as the quality and position of the contiguous rocky strata, are the same. The sound which separates these two islands is so narrow that we may join them in the short account now to be given, and consider them as one island. They lie west and by south of Aross in Mull, at the distance of about 10 English miles from that place, but only half a mile from the mainland of Mull; and extend to the length of 9 English miles east and west, by an average breadth of two miles. The superficial contents probably amount to about 9,000 Scotch acres; and the shores, following the high sea-mark, to 30 miles. The soil is thin upon the whole, where not boggy, but it is sharp and fertile. In consequence of the improvements commenced by the late Mr M'Donald of Boisdale, (who purchased Ulva from Mr M'Quarry mentioned by Dr Johnson, and in whose family it had been for many ages,) and continued by his son, Mr M'Donald of Staffa, the present proprietor, who has lately added Gometra and several other islands to the estate, these isles make a respectable figure among the Hebrides. They have a thriving and industrious tenantry, good breeds of cattle and horses; and, upon the whole, display many symptoms of advancing cultivation. The proprietor resides on the island of Ulva, with some branches of his family, in elegant hospitality, for the greatest part of summer and autumn; and superintends with activity and judgment the kelp manufacture and other business of his valuable property.

Although

Although Ulva lies on the western shore of Mull, and is therefore exposed to the fury of the Atlantic ocean, yet trees are found to thrive in its sheltered spots amazingly well. The plantations near Ulva-house exhibit a very encouraging spectacle to the other proprietors of Mull and the vicinity; and prove, like those of Collonsay and Gigha, that neither the soil nor the climate of the Hebrides are so hostile to the growth of timber as is generally supposed.

One of the principal sources of prosperity here is the kelp manufacture. Great attention is paid to it by the proprietor and his tenants, who manufacture in the best style upwards of 150 tons annually. The kelp of Ulva has acquired so favourable a reputation of late, that it usually sells higher than the kelp of the northern isles, and even than the average of what is manufactured around the shores of Mull itself. An active labourer can clear L.6. in Ulva by his labour in kelp-making, between the latter end of April and the middle of July. The operation is indeed arduous and fatiguing, but the profits are great.

It has been already stated* that much attention is paid by the proprietor of Ulva to the education of his tenants' families: no fewer than 126 scholars were regularly taught here in 1809. He is, indeed, exemplary in that respect—as the ladies of his family are, in their humanity and beneficence to the poor and sick of their vicinity.

X x

The

* Vide supra, p. 66.

The population of these isles has been included in that of Mull; to which, in church matters, they are annexed. It gradually increases; and the tenantry live in very comfortable and easy circumstances.

13. IONA, OR ICOLMKILL.

Dean Monroe, A. D. 1540—9.

“COLMKILL.—Narrest this, be twa myles of sea, laves the ile the Erische callit I-colm-kill, that is, Sanct Colm's ile, ane faire mayne ile of twa myle lange and maire, and ane myle braid, fertill, and fruitfull of corne and store, and guid for fishing. Within this ile there is a monastery of mounckes, and ane uther of nuns, with a parochie kirke, and sundrie uther chapells, dotat of auld by the kings of Scotland, and be Clandonald of the iyles. This abbay forsaid was the cathedrall kirk of the bishops of the iyles, sen the tyme they were expulsed out of the ile of Man by the Englishmen; for within the ile of Man was ther cathedrall kirk and living of auld, as I have already said in the description of that ile. Within this ile of Colmkill, there is ane sanctuary also, or kirkzaird, callit in Erische Religoran, quhilk is a very fair kirkzaird, and weil biggit about with staine and lyme. Into this sanctuary ther is three tombes of staine, formit like little chapels, with ane braid gray marble or quhin

quhin staine in the gavill of ilk ane of the tombes. In the staine of the ane tombe there is written in Latin letters, *Tumulus Regum Scotiae*, that is, the tombe ore grave of the Scotts kinges. Within this tombe, according to our Scotts and Erische cronikels, ther layes forty-eight crowned Scotts kings, through the quhilk this ile hes been richlie dotat be the Scotts kings, as we have said. The tombe on the south syde forsaid, hes this inscription, *Tumulus Regum Hyberniae*, that is, the tombe of the Irland kinges; for we have in our auld Erische cronickells, that ther wes foure Irland kinges eirdit in the said tombe. Upon the north syde of our Scotts tombe, the inscripzione beares, *Tumulus Regum Norwegiae*, that is, the tombes of the kings of Norroway; in the quhilk tombe, as we find in our ancient Erische cronickells, ther layes eight kings of Norroway; and als we find, in our Erische cronickells, that Coelus king of Norroway commandit his nobils to take his bodie and burey it in Colmkill, if it chancit him to die in the iles; bot he was so discomfitit, that ther remained not so maney of his army as wald burrey him ther; therefor he wes eirded in Kyle, after he stroke ane field against the Scotts, and was vanquisht be them. Within this sanctuary also lyes the maist part of the lords of the iles, with their lineage. Twa Clan Lynes with ther lineage, M'Kynnon and M'Guare with ther lineages, with sundrie uthers inhabitants of the hail iles; because this sanctuary wes wont to be the sepulture of the best men of all the iles, and als of our kings, as we have said; because it was the maist honorable and ancient place that was in Scotland in thair dayes as we reid."

The island of Icolmkill is situated at the south-west extremity of the Isle of Mull; and distant about 36 miles from the nearest part of the mainland of Scotland, which is the district of Morvern in Argyle-shire. It is separated from Mull by a narrow sound, about three quarters of a mile over, and three miles in length. In this strait, there is depth of water sufficient for any vessel, and ships of war have sometimes passed through it; but the narrowness of its channel, and the sunken rocks with which it is embarrassed, render it a very dangerous passage.

This small isle has been famous upwards of 1,200 years, for having been the residence of Columba, the man who first propagated Christianity among the northern parts of Britain. Its dimensions are not considerable, the extreme length being $2\frac{1}{2}$ miles, and the average breadth very little more than one mile. Dr Walker guessed its superficies at 3,840 English statute acres, or 3000 Scotch acres, which is at least double its real extent. Perhaps 1300 Scotch acres are very near the island's contents. Of these about 500 acres are in occasional cultivation; the rest is hill-pasture, morass, or rocks. The highest hill in the island is a little to the south-west of the ruins of the monastery, and about 400 feet high above the sea-level. There is no harbour, nor even tolerable landing place in boisterous weather. There is, indeed, a small creek lined with perpendicular rocks of serpentine marble in the south-west part of the island, where Columba landed when he arrived here from Ireland; and which is still called Port-na-curaich, from the name of a small boat composed of wood and hides, well known to the ancient Hebridians

bridians by the denomination of *curach* : but Icolmkill cannot boast of the hospitality of its shores, or of any thing done by nature or art to facilitate foreign intercourse with it.

The island is supplied with plenty of the finest springs; and though they are very small, a number of them collected form a pleasant rill that runs past the ruins of the ancient nunnery. There is no lake of any consequence; but, on a plain adjoining the gardens of the abbey, and surrounded by small hillocks, there are vestiges of a large piece of artificial water, which has consisted of several acres, and been contrived both for pleasure and utility : Its banks have been formed by art into walks ; and though now a morass, the remains of a broad green terrace may still be perceived passing through the middle of it, which has been raised several feet above the level of the water. At the place where it had been dammed up, and where are the marks of a sluice, the ruins of a mill are still to be seen, which served the inhabitants for grinding their corn. Pleasure grounds of this kind, and a method of dressing grain, still unpractised in those remote islands, must no doubt have been considered, in such early times, as matters of very high refinement.*

A light sandy soil prevails along the shores of the island, excepting where cultivation and abundance of manures have converted it into a dark loam. There are some pleasant and fertile plains along the sea-side, which afford good crops of barley and oats. The hills are covered in spring, summer, and autumn, with a fine verdure, and their pasture is famous over all this dis-

X x 3 • trict.

* Vid. Dr Walker's Essays on Natural History, &c. p. 115.

trict. The climate is good upon the whole, there being no high mountains in the immediate neighbourhood to attract clouds or showers of rain. The heat of summer (which is here considerable on account of the island's being sheltered by Mull from the cold easterly winds) with the warm nature of the soil, prove sufficient to produce more early crops than are common in this region of Scotland: for, although the people are usually very late in sowing their grain, they have harvest generally pretty early in August.

Adamnarius, in his life of Columba, (lib. ii. cap. 2.) writes, that the saint having ordered a quantity of barley to be given to some person in compensation for a damage which he had sustained, desired him at the same time to sow it, though it was then about midsummer, assuring him, contrary to his expectation, that he would the same season reap a plentiful harvest from it. In obedience to this mandate, the man committed the seed to the ground on the 12th of June (*now the 24th*) and reaped a crop from it in the beginning of August.

The fact is not surprising to have happened here, though it is regarded by the author with admiration, and gravely recorded as one of Columba's miracles.

About 30 years ago, Dr Walker found nearly 200 souls upon this island: In 1808 they amounted to 386. Mr Sacheverel, governor of the Isle of Mann, found upon it in 1688 no less than 80 families; which, at the usual average of nearly 6 to a family, gives 480 individuals;—a great population for so small an island—and an island never celebrated in modern times for good management in any respect. Of late, Mr Maxwell, the

Duke

Duke of Argyll's chamberlain in Mull, has portioned out Icolmkill into regular lots, as is the case with the farm of Creach already mentioned, on the opposite shore of Mull; and important improvements are naturally expected. Want of fuel is a great disadvantage to the inhabitants. They must carry all their peats in boats from the Isle of Mull; which costs them much trouble, and is attended with a serious risk and a heavy expence.

In an agricultural point of view, this island deserves scarcely any mention; but it is so interesting in other respects, that the reporter cannot help giving some account of it; and especially of its remains of antiquity.

The celebrated Columba, accompanied by a considerable number of other priests, arrived in Icolmkill about the year of our era 564, and in the 42d year of his age. He had been the disciple of St Patrick; was of royal extraction, being grandson to the supreme monarch of Ireland; and by his near alliance to the kings of Ireland and Scotland, with the authority of his character, he possessed great power and influence in both kingdoms.

Columba's institution, by these means, was soon richly endowed, and became the first, as it was for several ages, the *only university* in this part of the world. Being famed for all the philosophy and theology of the times, and for the severe manners and discipline of its founder, which were long kept up, it became a general place of education, not only for the Scots but for the British and Irish churches.

Among the honours bestowed by the kings of Scotland on the abbey of Icolmkill, we find the origin of a

custom which has continued ever since, the dedication of the trophies of war as monuments, though very strange ones surely, to Christian churches. After the signal victory which Aidan gained over the Picts and Saxons, he sent the banners of his conquered enemies to Columba, to be preserved in his abbey. Kenneth Macalpine also, after the final overthrow of the Picts, devoted the sword and armour of Dunstrenus, the Pictish monarch, to the church of Iona; the victory obtained by Aidan being at the time ascribed entirely to the prayers of Columba. It is not unlikely that the spoils of war were first introduced into monasteries from the persuasion of supernatural assistance acquired from the prayers of their pious inhabitants; and these trophies came by degrees to be devoted as monuments of gratitude as well as of glory. From whatever motives the custom may have been continued, it is certain that the preservation of monuments of victory must be useful to a nation, though it may be disputed whether churches are the most proper places for their reception.

For several centuries the inhabitants of this monastery continued under the absolute authority of their abbot, exclusive of any other; not subjected to vows, but governed by the laws of Columba. During this period they probably had the designation of Culdees; and all accounts agree in their being renowned for their learning, for their high contemplative piety, and austerity of life. But the establishment of the papal power was accompanied with a great alteration. Monachism having soon after made its way into Scotland, they became
an

an abbey of Benedictines, which was of baleful consequence both to their learning and virtue.*

Amidst the fierce conflicts of surrounding nations, of the Picts, Norwegians, Britons, Irish, and Scots, this island was held sacred, and spared even by the most savage barbarians. *Magnus Barefoot* himself, who, in 1098, invaded and conquered the Hebrides, with circumstances of horrid cruelty, treated Iona and its holy institution, with reverence and respect. But what Scandinavians and Pagans had thus spared, was ruined by the Gothicism of much later times. The learning of ages which had been treasured up in this little island, the records of nations, and the valuable archives of remote antiquity, which had been safe under the fury of the most barbarous of European free-booters, fell at once a sacrifice to an ill-judged decree of the synod of Argyle. Authorised by this, the zealous mob, at the time of the reformation, fell upon Iona as the most valuable and venerated seat of the Popish clergy; and nothing has escaped destruction, but such parts of the buildings, and such solid monuments, as were proof against the hands of rage, and even the waste of devouring time.

The bishop of the Isles usually resided in Icolmkill, and the great church belonging to the Abbey served as a cathedral of the diocese. This church, dedicated to the Virgin Mary, though inferior to many other gothic cathedrals and abbeys built in latter times in Scotland, has been magnificent considering the remote period in which

* Vide Walker's Essays, p. 128.

which it was built, and the difficulty of building in this secluded part of the world. St Mary's Church is also remarkable for the materials of which it is constructed. It is built of sienite or red granite, brought from the opposite coast of Mull. There the stone is procured in abundance, and of the finest quality, equal indeed to the famous red granite, which the Romans brought from Upper Egypt. It is no where polished in any part of the building; but formed by hammering to a pretty plain surface; and there are many fine blocks of it five or six feet long, both in the walls and in the rubbish. The labour of quarrying and of forming such a quantity of this stone, as so great a building required, is a piece of work which must strike with surprise the people of modern times.* The rock is solid; the stone of almost impenetrable hardness; but time itself can scarcely impair it; and where it can be overcome, it is the fittest material in the world for monuments which are to last for ages. The windows, doors, corners, arches, pillars, and other ornaments of the church are of a whitish grey free-stone, brought from another part of Mull at a considerable distance. The cement is so strong that it is as easy to break the stones as to force them asunder. It is of lime that has been calcined from sea shells, formed into a very gross mortar, with coarse gravel in a large proportion, and a great quantity of the fragments of white coral, which abounds upon the shores of the island.

The roof is composed of stone of a beautiful kind, but not our common slate. It is of a rich talky substance,

* Vid. *supra*, p. 2. 3.

stance, resplendent with the most vivid colours, and used in the form of very large slates.

The church is built in the form of a cross, and in most places the walls are standing pretty entire to where they join the roof. The south front measures 164 feet in length, including the walls, and is all along ornamented with pillars and arches of free stone. The body of the church measures 60 feet in length, and the two cross aisles are each 30 feet in length, and 18 in breadth within the walls.

The cupola is a square of 22 feet, which is the measure of each of the four arches that support it. Above this rises a square steeple of the same size, which is decayed at the top, but still remains between 70 and 80 feet high. The ascent in it has been by a narrow winding stair of hewn stone; and towards the top, on the south side, there is a large circular window, lozenged with free-stones, in the form of oblique spherical triangles; a gothic contrivance to admit the light, and exclude the winds and rain, before glass came to be used in churches. It is said that there was here a fine peal of bells, which were removed to Glasgow at the time of the reformation.

The choir is 60 feet in length within the walls, and 34 in breadth over the walls. Within it are several fine pillars carved in the gothic way, with great variety of figures, some of them abundantly fanciful and ludicrous, representing different parts of the scripture history. Among the rest there is an angel with a pair of scales weighing souls, and the Devil keeping down the scale in which the stand is with his paw. On the face of the latter is observed a sly and malicious grin.

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The fine altar, six feet long and four feet deep and broad, of one entire block of Iona marble, and mentioned by Mr Sacheverell as almost entire in 1688, has been carried off piece-meal by people who have visited the island. There was a belief common among the superstitious Hebridians, that a bit of this altar in a boat preserved it from ship-wreck; in consequence of which, the whole altar has been gradually stolen away.

Near the altar place, and on the north side of the choir, there is a fine monument of one of the abbots of Iona. His statue, very probably larger than the life, lies at full length, with the mitre, crosier, ring, and episcopal habit. It is all of one stone, and exceedingly well executed, with four lions at the corners, and supported above ground by a number of short pillars. It has lately been somewhat damaged by a stupid English traveller, as the schoolmaster said, who wished to try the hardness of the stone; but the following inscription is still distinctly legible: *Hic jacet Joannes Mac-Kingone Abbas de Y. Qui obiit anno Doi. Millesimo quingentesimo, cujus animo propitiatur altissimus, i. e.* Here lies John McKinnon abbot of Iona, who died A. D. 1500, to whose soul may the Most High be merciful.

This monument is usually thought to be of black marble, but it is of the true basalt of Pliny, a stone incomparably harder than any species of marble. It is a stone of which there are many columns in the Isle of Mull, from whence in all probability this statue was also brought. It resembles the common Scotch whin-rock, but is harder, blacker, and of a finer grain. The hardness

hardness of it is such as makes the execution of this monument really surprising, and it has been the workmanship of no mean statuary. The cushions on which the head of the statue rests, look as if they would feel soft; and the foldings of the drapery, notwithstanding the obdurate nature of the stone, are light, easy, and natural. Being thus remarkably qualified to resist the injuries of time, we accordingly find it as entire, (with the exception of the violence above specified,) and every touch of the chissel as sharp as they could have been on the day in which it was finished.

It is quite otherwise, however, with another monument that stands opposite to this, on the south side of the choir, and which seems to be of an older date; it is that of Abbot M'Kenzie who was a son of the family of Seaforth. This statue has been dressed with the same episcopal ornaments as the former; but being unhappily of free stone, the whole is now almost obliterated, and no vestige of an inscription can be seen.

Before the altar place, in the middle of the choir, lies another fine monumental stone of basalt. It has the figure of a man in armour upon it, as large as the life, *in relief*, and is said to be that of one of the M'Lean's of Dowart, who were for many ages the Lords of Mull. It is said that it was once richly embossed and ornamented with silver, but there is nothing now remaining but the tradition of the precious metal. In the small chapel adjoining to the south wall of the choir, lies interred Lachlan M'Fingone, father of the above-mentioned abbot, under a plain stone, with this inscription in Galic characters: † *Haec est cruz Lacclani M'Fingone*

gone et ejus filii Johannis Abbatis de Y facta anno Domini MCCCCLXXXIX, i. e. † This is the cross of Lachlan M'Kinnon, and of his son John abbot of Iona, erected in the year of the Lord 1489.

All that Dr Walker could learn of the library was, that the reformers came so suddenly upon Icolmkill that the inhabitants had time to carry little or nothing away. Some of the books and papers, however, were conveyed to the castle of Cairnburg, belonging to the chief of the M'Leans, and then judged impregnable. Here they remained till a siege in the time of Cromwell, when they were mostly all destroyed by fire. Some of them, however, still escaped. Dr Walker got notice of one manuscript, and saw an old gentleman in whose hands it had been for some time; but found, after hunting it through three or four islands, that the last leaves of it, as it was unluckily vellum, had fallen a sacrifice for measures to a taylor. It was a Latin translation of an Arabian work on physic.

At some distance from the cathedral, to the southwest, stands St Oran's Chapel, called here Religoran, dedicated to that saint who had been a disciple of Columba. It is 60 feet long and 22 broad within the walls, and choaked up with monumental stones, either covered with moss, or half buried in rubbish. This was the burial place of the Macdonalds, kings of the isles and lords of Islay; of the Mackenzies, Macleods, and other great families*. There is here one monument still entire,

* Vide Walker's Essays, p. 142.

entire, having a ship upon it with hoisted sails, a standard, and four lions, with the following simple inscription in Galic characters : *Hic jacet corpus Angviii filii Domini Angvii Macdonuil de Yle, i. e.* Here lies the corpse of Angus the son of Angus Macdonald Lord of Islay. This is probably the monument of that Angus who was Lord of Islay in the reign of Robert the Bruce, and the steady friend of that monarch in his greatest misfortunes.

In the small shrine described by Monroe and Buchanan, and also mentioned by Martin, it is probable that the monarchs alluded to by these authors were interred. It is now upwards of 800 years old, and has been very rudely but strongly built. It is yet entire, except at one corner where the roof has fallen in, or perhaps has been broken down by the curiosity of people to see the inside; but there is now no *vestige of an inscription* upon any part of it.

The remains of 50 kings, and some of them very celebrated in their time, reduced to such a span; the dust of Achaius, of the Donalds, of the Constantines, of Kenneth the Second, and Gregory the Great, each of them the conqueror of a kingdom; all confined within the walls of this narrow house, in the solitary islet of Iona, is such a curiosity as is perhaps nowhere else to be met with in the world; and, to a contemplative mind, the most melancholy spectacle of human greatness.

In the field upon the west side of the church there is a *cross*, which seems to be of a very ancient date. It is of one stone, near 8 feet high and 20 inches broad, set on a pedestal of granite. It is of the hardest whin-rock; and though it has the appearance of great age, it

is but little impaired, except at the top, where a part of it has been broken off by violence. Adamnanus seems to mean this stone when he informs us, that in Columba's time, there was a cross which stood mid-way between the monastery and granary, which was afterwards, says he, fixed in a pedestal. This cross is of a different form, and apparently of a different era, from any other to be seen in the Hebrides or Highlands: and no wonder, as it appears to be contemporary with Columba, and the oldest monument extant in the island of Iona; and probably the most ancient Christian monument in Scotland.

At a little distance from this cross, to the south, there stands another of a much larger size, and more entire. It is also one solid column of the hardest whin-rock, 14 feet high, and yet only 18 inches broad, and six inches thick. It is fixed in a pedestal of one stone, which is about three feet high, and hewn quite round into three steps. Though very probably posterior to the former, it appears to be very ancient. The labour and art of quarrying such a column, of transporting it to the island, and of polishing and erecting it when it was brought, are circumstances really astonishing in those early times, when one considers how inadequate the powers and skill of that part of the country would be at present to the execution of such a work. This confirms the truth of what was remarked very early in this report,* viz. That these regions were, at some former epoch, possessed of a considerable population, and
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* Vide p. 2 and 3.

of resources, wealth, power, and civilization, totally incompatible with the ideas usually adopted with regard to the ancient history of the Hebrides.

From this place to another ancient building, which was a nunnery, there runs a causeway, about 300 yards in length, and 15 feet broad, intersected at right angles by another of the same kind, which runs from the shore to the village. This causeway consists entirely of large blocks of the same red granite of which the cathedral is built, and which are very artfully wrought and compacted together.

By the side of it, on the left hand as you go from the shore to the church, there stands another cross, and the only one that now remains, besides the two above mentioned; though it is said that there were above 300 of them upon the island before the reformation. It is a greyish whinstone, 10 feet high, 14 inches broad, and only *three inches thick*! It is perfectly entire, but has no inscription upon it; finely shaped, and accurately carved, with a variety of pretty gothic ornaments; and is indeed a very elegant column.

The nunnery is a plain square building, erected long after the cathedral church above mentioned. The chapel is a neat building, and seems to have contained the tombs of *ladies* of high rank, as St Mary's and St Oran's did those of *men*. Upon one monumental stone there is the following inscription: *Bekeg Niin Shorle vic Burid Priorissa; i. e.* Beatrice, daughter of Somerled the son of Gilbert, prioress. Upon another fine stone of basalt, there is a *bas-relief* of the Virgin Mary, and under it one of a prioress in full habit with a mitre on her head. Round the head are these words, *Sancta Maria,*

ora pro me, i.e. Holy Mary, pray for me; and both figures are surrounded with this inscription: *Hic jacet Domina Anna, Donaldi Ferleti filia, quondam priorissa de Jona, quæ obiit Anno Domini Millesimo quingentesimo et undecimo; cujus animam Abrahamo Commendamus, i. e.* Here lies Lady Anne, daughter of Donald, son of Charles, formerly prioress of Jona, who died in the year of the Lord 1511; whose soul we recommend to Abraham.

Many monuments and statues of higher antiquity than those few now mentioned, might certainly be discovered with some care and trouble. But to remove the rubbish, and bring them to light, would occupy a considerable time, and be attended with some expence. The sooner however it is done the better, as, notwithstanding the measures adopted by the Duke of Argyle, the proprietor of the island, for preserving these monuments and ruins from violence and destruction, they suffer yearly dilapidations from the natives and from strangers. The former steal the stones for building the windows, doors, and corners of their cottages; and the latter, from motives of curiosity, carry away with them every thing they can lay hold of. It is indeed astonishing that the noble and ancient families above named, as connected with these remains, do not insist with the Duke of Argyle, either upon effectually preserving the bones and monuments of their ancestors from violation, or allowing them to carry them off to their present family vaults. This is peculiarly incumbent upon the Macdonalds, Macleans, Mackinnons, Mackenzies, Macleods, and Macquarries, and certainly deserves the attention of the heads of those ancient clans.

We

We conclude the account of the ruins of Iona in Dr Johnson's words :

“ The day soon failed us, and the moon presented a very solemn and pleasing scene. The sky was clear, so that the eye commanded a wide circle ; the sea was neither still nor turbulent ; the wind neither silent nor loud. We were never far from one coast or another, on which, if the weather had become violent, we could have found shelter, and therefore contemplated at ease the region through which we glided in the tranquillity of the night, and saw now a rock and now an island, grow gradually conspicuous and gradually obscure. At last we came to Icolmkill, but found no convenience for landing. Our boat could not be forced very near the dry ground, and our Highlanders carried us over the water. We were now treading that illustrious island, which was once the luminary of the Caledonian regions, whence savage clans and roving barbarians derived the benefits of knowledge, and the blessings of religion. To abstract the mind from all local emotion would be impossible if it were endeavoured, and would be foolish if it were possible. Whatever withdraws us from the power of our senses, whatever makes the past, the distant, or the future predominate over the present, advances us in the dignity of thinking beings. Far from me and from my friends be such frigid philosophy as may conduct us indifferent and unmoved over any ground which has been dignified by wisdom, bravery, or virtue. That man is little to be envied, whose patriotism would not gain force upon the plain of Marathon, or whose piety would not grow warmer among the ruins of Iona.”

Some of the fossils of Icolmkill deserve notice— 1, *The Port-na-Curaich stone*, often used by the Hebrilians as an amulet, and frequently seen employed in rings, seals, snuff-boxes, &c. by strangers, is a fluor or crystallised stone, of a homogeneous substance, somewhat resembling quartz, and is formed in detached masses in the veins of the rocks of serpentine, which are found upon this island. From these rocks it is dislodged by the waves, and found along the shore. It is semi-pellucid, and of a green colour, but sometimes clouded with white and yellow spots, which are opaque. Its natural surface, both to the eye and touch, is smooth, soft, and to appearance oily, and this property is equally remarkable when the stone is polished. Its powder is white. It does not strike fire with steel. It admits of a fine polish, though rather inferior to that of the cornelian. This stone is found in nodules from the size of a pea to that of a pretty large apple, but the larger it is in size the less bright it is in colour, and more frequently debased by foulness and opaque spots than when it is small.

These stones are found only near Port-na-Curaich, in Icolmkill, and accordingly they are carefully picked up by the inhabitants to sell or give away to strangers. If free from blemishes, transparent, and of a good green colour, they are extremely beautiful when polished, and highly valued by jewellers and lapidaries. It is seldom, however, that they occur with these properties, and they become annually more rare in consequence of the great demand.

2. *Icolmkill marble*.—This marble is of a white colour, and semi-pellucid in a thin plate. It is composed of small irregular masses, cemented together without any order, but of a laminous structure; the laminæ being plain, parallel, and resplendent. It breaks with a shining plain surface, and the grain of the fracture is rough, unequal, and laminous. It strikes fire with steel. It dissolves with effervescence in all the acids. It calcines to a quicklime, extremely pure and white, with much the same quantity of heat as common limestone.

There are some strata of this marble in the island, from whence the large altar table of the cathedral was taken, as we have already mentioned. The remains of it stood for centuries exposed to all the inclemencies of the weather, without being any way affected by it, except in change of colour, from white to a light yellow, which commonly happens to other white marbles. It is a stone therefore very proper for monuments which are to stand in the open air; it cuts freely, and receives a good polish, when the laminous masses and micaceous particles of which it consists shine distinctly through the surface.

3. *Icolmkill spotted schistus*.—The north-east side of the island is chiefly composed of this stone. It is difficult to work, and too coarse for slates.

4. *Sienite, or red granite*.—There are extensive rocks of this stone upon the south-west shores of Icolmkill, which are sound and entire, and may be cut in any form, and of all dimensions. It is nearly as hard as

the isle of Mull granite on the opposite coast, to which it indeed bears a striking resemblance *.

5. *Serpentine* †.—This is perhaps the most beautiful sort of stone found in large quantities in Scotland. It may be quarried to any extent in Icolmkill.

6. *Icolmkill hieracites, or hawkstone*—Which name it receives from resembling the plumage of a hawk of the Hebridian species. It is the stone with which the monastery has been anciently covered, in the form of large thick slates, great numbers of which are still to be seen in the ruins. The part of the island from which they were brought is now unknown; and it is indeed doubtful whether any quarries of them can at all be traced in this district, or whether they have not been imported from a distant quarter.

The good soil and climate of Icolmkill, with its distance from the mainland of Scotland, and consequently from the scenes of national feuds and dissensions which were carried on upon a grand scale, were not all the advantages possessed by this island for becoming the seat of a great ecclesiastical institution in a barbarous age. It possessed singular facilities for building the requisite edifices, and it was supplied with abundance of fish, and of excellent water. The quantities of shell fish, marine plants, &c. are very great; and these,

* Vid. *supra*, p. 41.

† Vid. p. 43.

these, as well as the objects already named, might have had their share of influence in fixing St Columba's choice on this far famed and interesting island.

14. STAFFA.

ABOUT 10 miles north and by east of Icolmkill, and nearly 7 miles from the coast of Mull, lies Staffa, now a celebrated natural curiosity, eagerly visited by travellers from all parts of Europe, but wholly unnoticed by strangers until the last 40 years. It is an island chiefly composed of basalt, nearly a mile long, and half a mile broad, containing from 2 to 300 acres of surface, of which 3 or 4 acres have at some period been in cultivation. It is the property of Mr Macdonald of Staffa, whose estate of Ulva, Gometra, Inch Kenneth, &c. afforded many richer titles than this bleak rock, but who has his title from as singular a territory as any in the known world. In an agricultural survey, Staffa has scarcely any right to appear; but it would be unpardonable to pass it over in silence altogether in an account of the Hebrides, of which it has of late been the greatest boast. The name of Staffa, or Staff-œ, is derived probably from the circumstance of the basaltic pillars which adorn it, resembling the object meant by that term in the Danish, and which was in the ancient acceptation, a pillar, beam, or column, as well as a staff. Buchanan calls the island Staffa—Monroe takes no notice of it, nor does Martin, or indeed any other author, until Sir Joseph Banks visited it in 1772, in conse-

quence of the recommendation of Mr Leach, an English gentleman whom he accidentally met in the Hebrides, when on his voyage to Iceland.

“ We arrived,” (says Sir Joseph) “ at the south-west part of the island, the seat of the most remarkable pillars, where we no sooner arrived than we were struck with a scene of magnificence, which exceeded our expectations, though formed, as we thought, upon the most sanguine foundations : The whole of that end of the island supported by ranges of natural pillars mostly above 50 feet high, standing in natural colonnades, according as the bays or points of land formed themselves, upon a firm basis of solid unformed rock ; above these the stratum, which reaches to the soil or surface of the island, varied in thickness, as the island itself formed into hills or vallies ; each hill, which hung over the columns below, forming an ample pediment ; some of these above 60 feet in thickness, from the base to the point, formed, by the sloping of the hill on each side, almost into the shape of those used in architecture. Compared to this, what are the cathedrals or the palaces built by men ? Mere models or playthings ! Imitations as diminutive as their works will always be when compared to those of nature ! Where is now the boast of the architect ? Regularity, the only part in which he fancied himself to excel his mistress, Nature, is here found in her possession ; and here it has been for ages undescribed. Is not this the school where the art was originally studied ? And what has been added to this by the whole Grecian school ? A capital to ornament the column of nature, of which they could execute only a model ; and for that very capital

capital they were obliged to a bush of acanthus. How amply does nature repay those who study her wonderful works ! With our minds full of such reflections, we proceeded along the shore, treading upon another Giant's Causeway, every stone being regularly formed into a certain number of sides and angles, till in a short time we arrived at the mouth of a cave, the most magnificent I suppose that has ever been described by travellers.

" The mind can hardly form an idea more magnificent than such a space, supported on each side by ranges of columns, and roofed by the bottom of those which have been broken off in order to form it ; between the angles of which, a yellow stalagmitic matter has exuded, which serves to define the angles precisely, and at the same time vary the colour with a great deal of elegance : And to render it still more agreeable, the whole is lighted from without ; so that the farthest extremity is very plainly seen from without ; and the air within, being agitated by the flux and reflux of the tides, is perfectly dry and wholesome, free entirely from the damp vapours with which natural caverns in general abound. We asked the name of it. Said our guide, ' the cave of Fhinn.' ' What is Fhinn ?' said we, ' Fhinn M'Cou, whom the translator of Ossian's works has called Fingal.' How fortunate that in this cave we should meet with the remembrance of that chief whose existence, as well as that of the whole epic poem, is almost doubted in England.

" On the west side of the isle is a small bay, where boats generally land ; a little to the southward of which the first appearance of pillars are to be observed. They are
small,

small, and, instead of being placed upright, lie down on their sides, each forming the segment of a circle. From thence you pass a small cave; above which the pillars, now grown a little larger, are inclining in all directions. In one place, in particular, a small mass of them resembles the ribs of a ship. From hence, having passed the cave, which, if it is not low water, you must do in a boat, you come to the first ranges of pillars, which are still not above half as large as those a little beyond. Over against this place is a small island, called in Erse, *Buachaille*, or the "Herdsmen," separated from the main one by a channel not many fathoms wide. This whole island is composed of pillars without any stratum above them. They are still small, but by much the neatest formed of any about the place. The first division of the island, for at high water it is divided into two, makes a kind of cone, the pillars converging together towards the centre. On the other they are in general laid down flat; and in the front next to the main, you see how beautifully they are packed together, their ends coming out square with the bank which they form. All these have their transverse sections exact, and their surfaces smooth, which is by no means the case with the large ones, which are cracked in all directions. I much question, however, if any one in this whole island of *Buachaille* is two feet in diameter. The main island opposed to *Buachaille*, and farther towards the north-west, is supported by ranges of pillars pretty erect; and though not tall (as they are not uncovered to the base) of large diameters; and at their feet is an irregular pavement, made by the upper sides of such as have been broken off, which extends as far under

under water as the eye can reach. Here the forms of the pillars are apparent. These are of three, four, five, six, and seven sides, but the numbers of five and six are by much the most prevalent. The largest I measured was of seven. It was four feet five inches in diameter."

"The surfaces of these large pillars, in general, are rough and uneven, full of cracks in all directions. The transverse figures in the upright ones never fail to run in their true directions. The surfaces upon which we walked were often flat; having neither concavity nor convexity. The larger number, however, were concave, though some were evidently convex. In some places the interstices within the perpendicular figures were filled up with a yellow spar. In one place a vein passed in among the mass of pillars, carrying here and there small threads of spar. Though they were broken and cracked through and through in all directions, yet their perpendicular figures might easily be traced. From whence it is easy to infer, that whatever the accident might have been that caused the dislocation, it happened after the formation of the pillars. From hence, proceeding along the shore, you arrive at Fin-gal's cave. Its dimensions, though I have given, I shall here again repeat in the form of a table.

	<i>Pt.</i>	<i>In.</i>
Length of the cave from the rock without	371	6
From the pitch of the arch	-	250 0
Breadth of ditto at the mouth	-	53 7
At the farther end	-	20 0
Height of the arch at the mouth	-	117 6
At the end	-	70 0
		Height

	<i>Ft.</i>	<i>In.</i>
Height of an outside pillar - - -	39	6
Of one at the north-west corner - - -	54	0
Depth of water at the mouth - - -	18	0
At the bottom - - -	9	0

"The cave runs into the rock in the direction of north east by east by the compass. Proceeding farther to the north west, you meet with the highest ranges of pillars, the magnificent appearance of which is past all description. Here they are bare to their very basis, and the stratum below them is also visible. In a short time it rises many feet above the water, and gives an opportunity of examining its quality.^a Its surface is rough and has often large lumps of stone sticking in it, as if half immersed. Itself, when broken, is composed of a thousand heterogeneous parts, which altogether have very much the appearance of a lava, and the more so as many of the lumps appear to be of the very same stone of which the pillars are formed. The whole stratum lies in an inclined position, dipping gradually towards the south east."

The cave of Fingal is undoubtedly one of the most magnificent objects which the eye can behold; consisting, as it does, of a massy roof of enormous weight resting on the tops of regular columns. The roof consists of fragments of pillars, the shafts of which have been washed away by the ocean. The fragments are cemented by calcareous matter; which, when contrasted with the dark purple hexagons formed by the ends of the pillars, gives the whole the appearance of a Mosaic work. Between the upright pillars is often found a cement,

ement, generally of a beautiful white colour, interspersed with rhomboidal and prismatic crystals, which are sometimes tinged with green. This substance is in general calcareous spar (crystallized carbonate of lime.) In some instances, however, the space is filled up with infiltrations of beautiful white granite. In the very midst of the basaltic pillars, when broken, are to be found pieces of radiated zeolite. At the farther extremity of the cave of Fingal is a small cave, which, from certain passages sends forth an agreeable noise; hence it has received the name of an-ua-bhinn, or the "melodious cave."

Dr Uno Van Troil, the learned bishop of Linakæping, who visited Staffa along with Sir Joseph Banks, in his letters on Iceland, gives the following animated account of this cave: "How magnificent are the remains we have of the porticos of the ancients! and with what admiration do we behold the colonnades which adorn the principal buildings of our times: And yet every one who compares them with Fingal's cave, formed by nature, in the island of Staffa, must readily acknowledge that this piece of nature's architecture far surpasses every thing that invention, luxury, and taste, ever produced among the Greeks."

"This superb monument," says M. de St. Fond, "of a grand subterraneous combustion, the date of which has been lost in the lapse of ages, presents an appearance of order and regularity so wonderful, that it is difficult for the coldest observer, and one the least sensible to the phenomena which relate to the convulsions of the globe, not to be singularly astonished by this prodigy, which may be considered as a sort of natural palace."

I (adds he) have seen many ancient volcanos, and I have given descriptions of several superb basaltic causeways and delightful caverns in the midst of lavas, but I have never found any thing which comes near to this, or can bear any comparison with it, for the admirable regularity of the columns, the height of the arch, the situation, the form, the elegance of this production of nature, or its resemblance to the master-pieces of art, though this has had no share in its construction. It is therefore not at all surprizing that tradition should have made it the abode of a hero."

Basaltes have been carefully analized, and found to contain nearly the same component parts with lava; and therefore many philosophers have concluded that these are lava immersed in water, and cooled and crystallized by that medium. Bergmann gives the analysis of basalt and lava as follows, viz.

Basaltes, 100 parts contain		Lava, 100 parts contain	
Siliceous earth	50	Siliceous earth	49
Argillaceous	15	Argillaceous	35
Calcareous	8	Calcareous	4
Magnesia	2	Iron	- 12
Iron	- 25		

We take leave of this little island by recommending to all travellers who visit the western shores of Argyshire, to devote three days time to seeing it and Iona. The best plan is to take a boat from Oban to the neighbourhood of Aross, and thence to go by land to Laggan-ulva, where a boat may be procured for a moderate fare for a whole day's voyage to Staffa and Icolmkill.

If

If the wind is southerly, or south-west, and blowing fresh, it is in vain to attempt the voyage, but travellers may safely trust to the judgment and fidelity of the native boatmen, who are always ready to serve strangers to the utmost of their ability. Such as have letters of recommendation to Mr Macdonald of Staffa, are sure of meeting with kindness and hospitality, as well as of being highly gratified by the conversation of an accomplished and enlightened gentleman.

15. TYREE.

THIS beautiful and fertile island, lying due west of Mull, and 16 miles from Rù-threishinish there, is entirely omitted by Dean Monroe in his description of the Hebrides, a circumstance altogether unaccountable, as it belonged of old to Icolmkill, and as the learned and venerable Dean is very particular in pointing out the possessions of the church in other districts of those isles. Buchanan mentions Tyree as "an island eight miles long and three broad, the most fertile of all the western isles, abounding in corn, cattle, fish, and wild fowls:" and Martin, in his usual strange way, states the length at *four miles from south-east to north-west*, and gives such an account of the part of it commonly called *reef*, as makes the reader doubt of his having at all seen the island.

Tyree,

Tyree, i. e. Tìr-Iì, or land of Iì, so called from its having belonged to the monastery of Iì or Iona, is 10 miles long, and varies in breadth from seven miles to one, the average being $2\frac{2}{3}$, and the superficial contents 24 square miles, or about 12,000 Scotch acres. Of these 700 are fresh water lakes and morasses. It stretches, not as Martin says from south-east to north-west, but directly the opposite way, from south-west to north-east, and is so much indented by the sea that its coast, following the sea mark, is about 55 miles long. It has a large proportion of arable land, amounting to about 5000 acres, and maintains the largest population of all the Hebrides in proportion to its surface. The number of souls in 1808 was 3200. The quantity of live stock is almost incredible, especially when we consider the bad management of the pasture and meadow lands. The number of horses was 1500, of cows 2000, of hogs 12 or 1300; of sheep, indefinite, but perhaps 800; and of geese, ducks, and poultry, greater than was found on double the space of any other island in those parts.

In consequence of the lately adopted arrangement of giving separate possessions to the tenants who formerly held their lands in townships and runrig, the island is beginning to improve, and some sort of order begins to appear in its agricultural operations. Much, however, remains to be done. Inclosures, drains, and adequate march dykes, are much wanted. Green crops, which cannot be cultivated without good inclosures and competent fences, must be generally adopted before the island can resume the fertility of which bountiful nature has made it susceptible, and which a constant
course

course of injudicious and scourging cropping has deprived it for several ages.

Martin says that "The isle has been always valued for its extraordinary fruitfulness in corn, yet, being tilled every year, it is become less fruitful than formerly. The cows and horses are of a very low size in this isle, being in the winter and spring time often reduced to eat sea ware, &c." He adds, that the breeds of both are good, though small sized, in consequence of bad feeding and mismanagement. It is unnecessary to repeat what has already been stated, Chap. IV. Sect. I. in this report, on the island now under consideration. The population is evidently excessive and must be diminished. The most eligible mode of accomplishing such diminution is not so obvious as the necessity of the measure; but any man who visits Tyree must be sensible that one third of the present population would be fully sufficient for managing the agriculture and kelp of the island. The quantity of kelp usually manufactured is from 200 to 320 tons, according to the nature of the seasons, and the quantity of sea-weeds cast upon the shores.

There were formerly large sums of money drawn by Tyree for whiskey, distilled from the excellent barley of this fertile island; but of late this branch of industry has been suppressed, and that too, very probably, to the ultimate advantage both of proprietor and tenants.

The island is low, no part being quite 350 feet above the level of the sea. It derived its appropriate vulgar name from this circumstance, viz. *rioghachd-bharr-thonn*, i. e. *the kingdom just emerging from the summits of the waves*. The soil varies from pure sand to black

moss; and in some places, being the decomposition of lime stone and mixed with calcareous matters, is eminently fertile, and susceptible of the most profitable and lucrative system of regular agriculture. The great difficulty is that of inclosing, and of preventing blowing sands from injuring the more solid and valuable grounds. The extent of such ground in Tyree amounts to nearly 5000 acres, (as already mentioned,) including the reef, which is a pentagon of 1250 acres in the middle of the island, evidently formed by the sea, and though not at present liable to inundations from that element, as Martin says it was in his time, is not more than 20 feet in any part above the high water or sea mark. This reef was always a common to the tenants of Tyree, until very lately, when the factor got it as a separate farm. Its surface is dark loam above sand; the loam is from six to nine inches deep, and the sand in some parts several fathoms. The whole yields a beautiful specimen of Hebridian verdure in summer and autumn, and exhibits, from a conical tumulus near the centre, a display of richness unparalleled in any of the Hebrides, excepting some districts of Islay, Skye, and Uist.

The crops generally cultivated are barley, oats, potatoes, flax, and on some few farms, grasses and turnips. Barley has yielded on many farms 12 or 13 fold from the seed. In 1806 Mr Maclean, the active and intelligent tacksman of Kilmaluag, had 15 returns from barley and 24 from potatoes on some fields of his farm.

There is no wood of any kind on the island; consequently it will be difficult to raise timber, although the trunks of trees dug out of the mosses, are sufficient evidence

evidence of this island having once, like the rest of the Hebrides, been covered with wood. The want of shelter, resulting from this total nakedness, is the greatest natural disadvantage of Tyree, and one which nothing but a regular plan of inclosing, planting furze and broom, and afterwards hardy willows and other trees already recommended, in this report, will effectually remove. Previous to the prosecution of such plans, there must be some gentlemen farmers settled here, and they and the common tenants must have pretty long leases granted them. The very small and minute subdivisions of land must be abolished, and no less quantity than a penny land be in the possession of each individual tenant. These possessions must go to the eldest son, or at least to *one* specified heir of the tenant, and not be divided as at present *in infinitum* among his children and connections, to the ruin of the lands, as well the endless degradation and misery of the tenants themselves. Complete melioration must be given to the tenants for such houses, dykes, drains, and other permanent improvements as they may make; and every inducement held out to them to follow upon this island the example of Islay, Collonsay, and Gigha.

The minerals of Tyree have not been turned to any account. The marble of Ballyphetrish is no longer wrought, nor is it probable that any manufacture or branch of industry will prosper until a more systematical plan of management than those hitherto tried shall be adopted. A great and almost unsurmountable obstacle to the improvement of Tyree is the scarcity and expensiveness of fuel. The inhabitants are, for the most part, under the necessity of importing peats from

the island of Mull; and the expence of importing them, though considerable, is but a small part of the difficulty. They must first obtain permission to cast or dig their peats—then make roads for the carriage of them to the shore—then make several voyages over the worst part of the most boisterous sea in Europe, for the various and tedious operations of digging, raising, drying, stacking, carrying, boating, and importing home these peats to the nearest landing place to their dwellings—(for there is no good harbour in Tyree;)—and, finally, they must carry them from the shore to their own houses. It may be a very fair calculation to allot one-third of the year's exertions, and three-fourths of its risks and dangers, to this emolpment alone; and great deductions of rent should therefore be allowed the inhabitants on account of the dismal and dangerous operations connected with their annual demands of fuel.

The natives of Tyree are, like the generality of their countrymen, a brave and hospitable race, and make a good figure among the other Hebridians, notwithstanding many disadvantages to which they have long been subjected. The Duke of Argyle is proprietor of the whole island; his ancestors having obtained it in consequence of the misfortunes of the ancient and gallant family of Dowart. The valued rent of Tyree and Coll is L.280. 10s. 3d. and the real rent of Tyree, kelp included, is about L.3000 per annum.

16.—COLL.

This island is omitted, like Tyree, by Dean Monroe, and but slightly mentioned by Buchanan, who says that "it is 12 miles long and 2 broad, and very fertile." Martin, who seems to have been a stranger equally to Monroe's and Buchanan's descriptions of the Isles, says that it is 10 miles long and 3 broad; and adds a fanciful circumstance, "that the Isle of Coll produces more boys than girls, and the isle of Tyree more girls than boys; as if nature intended both these isles for mutual alliances, without being at the trouble of going to the adjacent isles or continent to be matched. The parish book, (adds he,) in which the number of the baptized is to be seen, confirms this observation." The case is changed since Martin's time, (who probably got his information from some marriageable damsel *in Tyree*,) and more boys are born in both islands than girls; but the existing numbers of the sexes are pretty nearly the same as on the other isles; and, for reasons already mentioned and connected with the nature of the country, somewhat in favour of the females. The population of Coll is very nearly 1,100 souls, and has rather increased of late years.

The island is 14 miles long, from south-west to north-east, and varies in breadth from $3\frac{1}{2}$ to half a mile, but may be stated at an average $2\frac{1}{2}$ miles, which gives a surface of 30 square miles, or 15,000 Scotch acres.

Of this extent nearly two-thirds are hills, rocks, blowing sands, lakes, and morasses,—and the remaining third is pasture, meadow, or corn land. Four-fifths of the whole island belong to Mr McLean of Coll. There are upwards of 40 lakes of one description or another, of which one half are stored with trouts. The eels, as in Tyree, destroy the trouts in the rest of them. There are no hills of consequence, and yet the island presents a constant alternation of hill and dale. The highest summit is not above 450 feet above the level of the sea. There are from two to three thousand acres of blowing sands on the west and north-west sides of the island; the east and south-east sides are rugged, and present very abrupt rocks to the Atlantic. The soil is moorish, sandy, or composed of a mixture of both sand and peat-moss, upon a bottom of rock or gravel, and sometimes upon deep sand. In most places the superstratum is very thin; but it is in general, as Martin and Buchanan assert, fertile in grass and corn. The crops usually raised are barley, bigg or bear, oats, potatoes, flax,—and on the proprietor's farm some wheat,* turnips, and green crops. The island, in general, yields grain sufficient to support its own population, especially since illicit distillation has been suppressed by the exertions of the principal proprietor; and since his tenants have had their possessions subdivided and set apart for each family. To this arrangement they were at first very unwilling to accede, but a few years experience of its advantages

* Wheat, for want of a flour-mill, is not at present a profitable crop in Coll.

advantages has convinced them that the old system would not have enabled them to subsist on their lands, supposing they had them gratis, so comfortably as they now do by adopting the new. They indeed eagerly seek for what they once regarded as oppressive and unwarrantable, and are in a fair way of rapid improvement in agricultural practice. Mr McLean has done much towards the general introduction of green crops and the improved husbandry; and set the example, upon a large farm which he keeps in his own hands, of a judicious rotation of crops, and a selection of good breeds of horses and cattle for the soil, climate, and other circumstances of the island. Finding that sheep proved pernicious in tearing up the roots of the *arundo arenaria*, and other plants which served to check the devastating progress of blowing sands, he has greatly diminished their numbers upon his estate; and he has also, by means of roads, and the aid of carts, which soon followed the making of roads, greatly reduced the number of horses formerly kept by the tenants. The breed of horses and cattle is accordingly improving as fast as circumstances permit; and the management of live-stock is rendered gradually more easy by the action which has lately been paid to inclosing and subdividing the different farms. The quality of the natural herbage of Coll, consisting of white, red, and yellow clover, and other rich grasses, has always been reckoned excellent,—and the breeds of cattle have accordingly been held in good estimation by drovers and graziers. Nearly 220 head of black cattle are annually exported; and perhaps 80 or 90 slaughtered in the island. This would, in proportion to the other Hebrides, give a total

of 1400 or 1500 head for the whole of Coll, and is perhaps very near the truth. The ferries to Mull, and thence to the mainland of Argyleshire, are a great drawback upon the value of cattle both here and in Tyree; and, accordingly, it would be highly desirable that the tenants turned their attention more to the dairy, and to the fattening of cattle, than is customary at present. Considerable quantities of kelp, *i. e.* from 80 to 100 tons, have lately been annually manufactured; but the island cannot be considered as particularly well adapted to that branch of industry. The natives display a good deal of ingenuity in making woollen and linen cloth for their families,—and in the use of the natural dyes which the island affords. They are, upon the whole, a virtuous and exemplary race; and have, on every occasion, manifested the most patriotic attachment to their civil and religious establishment.

The proprietor attempted some years ago to establish a regular fishery; and, for that purpose, invited some expert fishermen from Shetland to settle in Coll, for the purpose of teaching the natives the manner of catching and curing fish practised by those expert islanders. He was at considerable expence in providing for them; but the plan has not answered. Although the fishing grounds near Coll and Tyree are so good, and so much resorted to by ling, cod, lythe, and fishes of every description common to the Hebrides, that they attract fishermen from distant isles to fish upon them,—yet the people of this island, wedded to their ancient habits, cannot be prevailed upon to enter methodically and regularly upon that lucrative business. There is only one fishing boat in Coll, in the real sense of the expression,
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while in Barray, which is not so well fitted for the fishery as Coll, there are at least forty. Various circumstances may have contributed to this apathy in the people of Coll towards the fishing business, certainly by much the most lucrative to which they could turn their attention ;—probably the chief reason is their easy condition upon their lands, and the want of that most potent of all incentives to the exertions of mariners, namely, necessity.

The island is over-peopled at least *one-third*, a circumstance, though apparently favourable, yet, is truth, very much the reverse to the agricultural prosperity and advancement of the country. The landlord, like many other Hebridian proprietors, knows not how to dispose of that part of the population which he cannot accommodate with lands. He cannot bear the thought of turning them at once adrift into the world without having any means of subsistence for themselves and their families ; and yet there remains no other alternative in the present situation of the island, except the distressing one of crowding them together upon small portions of land ; which, even under good management and although rent-free, could scarcely feed such a numerous population. This dilemma is also attended by the additional hardship of retarding or preventing every agricultural improvement. The proprietor cannot possibly effect these, but by means of substantial tenants in possession under leases of considerable quantities of ground : But he would need three times the extent and resources of Coll to bestow suitable farms upon his present tenants, and many thousand pounds to put them into a proper condition for stocking them. It is in truth

a great hardship for an Hebridian proprietor of limited income, (suppose L.2000 or L.3000 per annum,) to be under the necessity of maintaining three or four hundred souls of a superfluous population at his expence, or of forcibly driving them away from the dwellings of their fathers, without capital, trade, or any other visible means of subsistence. This is a matter which loudly calls for the paternal interposition of the legislature, and to which the attention of the Honourable Board of Internal Improvement cannot be too seriously turned. It is a crying evil over all the Northern Isles,—and an evil which is yearly and daily increasing.

Might not Government recommend a meeting of the Hebridian proprietors particularly interested in this matter, and obtain their sentiments upon the most eligible means of disposing of the surplus population of the smaller isles? Might they not point out various means of subsistence, either in agriculture, fisheries, or manufactures, on the more extensive isles and opposite continent, or in other districts of Scotland where labour is so much complained of as enormously high, and facilitate to the redundant population of Coll, Tyree, Rum, &c. the means of leaving their present crowded stations, and thereby benefiting themselves, their landlords, and the country at large? This might surely be done without any clamour or noise, without the appearance of violence, or the odium of expatriation; and every party concerned would derive essential benefit from the measure. The peculiar situation of this remote district renders such consultation of its proprietors particularly advisable. People in London, and in our large cities and places of great resort, know nothing

thing of the hardships of a humane Hebridian landlord's situation. They have no idea of the difficulties attending the removal of tenants from lands, or persons of every description from the homes to which they have succeeded as by right of heritage, from a long line of ancestors, connected perhaps by blood with the landlords to whom they are now a burden, and whose estates they serve merely to encumber and to deteriorate; and they have no idea of the expence and trouble of removing poor people's families from one island, or one estate to another. Of these, Hebridian gentlemen, *and they alone*, are competent judges; and, therefore, they ought to be consulted by Government in a matter so intimately connected with the best interests of this extensive portion of our empire. Mr McLean has settled several families on the south-east parts of this island, which were formerly unoccupied, and they manifest considerable industry; but the want of manure limits their exertions, so that the resources afforded by that part of Coll cannot essentially remove the evils resulting from the general over-population. There is no wood at present on the island, excepting fruit trees which grow in the proprietor's garden, bear fruit, and thrive extremely well, in consequence of being sheltered from the western storms, and the violence of the Atlantic ocean. It is nothing in the air or climate of even the most exposed isles, therefore, which proves pernicious to the growth of timber, but merely exposure to the furious westerly winds, which loosen the roots of all tall plants, by violently shaking and tossing their stalks or trunks;—and when vegetables are protected from
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this last mentioned inconvenience, they thrive as well as in any other soil or atmosphere whatsoever.

Notwithstanding the evils already stated as the result of a redundancy of population, it cannot be denied that Coll is greatly before the most part of the Hebrides in point of agricultural improvements. Its advantages are chiefly derived from the residence of the proprietor, and the example which he holds out for the imitation and encouragement of his tenants. He follows the footsteps of his amiable brother, mentioned by Dr Johnson, in promoting the welfare of his people by every possible means : he procures grass seeds, the seeds of green crops, and of the most suitable white crops, for his own farm, and spreads them among his tenants farms : he shows them the approved modes of tilling, dressing, draining, manuring, and cropping their lands, and has succeeded astonishingly, though with arduous exertions, in gradually overcoming old prejudices and deep-rooted habits. He has put an effectual stop to illicit distillation, and consequently increased the happiness, by improving the morals, of his islanders ; and, what is uncommon, he is at the same time highly respected and very much loved by them. The tenants children have the advantage of a good school : no fewer than 108 attended it in 1809. He never let any farm to the highest bidder, or accepted of secret offers, which he knew, though practised elsewhere without shame, would here be productive of misery and mischief ; and in his general management he has always combined the talents of an able landlord with the virtues of a benevolent and patriotic chieftain.

17. LISMORE.

Dean Munroe.—"Lismore, an iyle quhet leid ure is, forment Deward. This iyle is four myle lang, with ane pareche kirk in it." Buchanan mentions this island as "the old seat of the bishops of Argyll, 8 miles long, and 3 broad, abounding in every thing common to the other isles, and also in metals." Martin does not mention Lismore. It is a low green isle nearly 10 miles long, and of an average breadth of $1\frac{1}{2}$ mile, containing about 8000 acres of superficial extent, rocks, lakes, &c. included. It runs from south-west, where it is $3\frac{1}{2}$ miles distant from Dewar-point in Mull, to north-east. The whole island is a mass of limestone, which bassetts, or appears at day, over most parts of the surface. The soil is very fertile, being the decomposition of lime, and here and there richly manured with marl. In the bottom of every marsh or lake, this last mentioned mineral is found of the depth of from 8 to 18 feet. There is to be seen in the face of a limestone rock, seven or eight feet above the surface of the ground, and quite beyond the reach of tides at present, a seam 12 or 15 inches broad, of a concretion composed of all the varieties of shells to be found on these coasts, with now and then a small mixture of charcoal, as firm, and nearly as solid, as the rock surrounding it, to which it seems to be perfectly united, and of which it makes a part. Pieces of this seam have been carried to Edinburgh as curiosities, and are preserved in some cabinets there. Water running over the face of the limestone rocks of this

this island has gradually worn them away, and many grotesque figures are formed by the more solid and remaining parts. These limestone rocks lie all in one direction, in layers one above another, nearly from south-east to north-west. There are seams or spars, three or four feet broad, of remarkably hard flinty rocks or stones, running across the island, at the distance of nearly two miles from one another. These seams appear to run in a direct line with similar ones on the opposite coast of Mátvern, where there is no limestone. But of all the curiosities in this island, the most remarkable seem to be deer horns of immense size, and cow horns of still greater magnitude in proportion, which have been dug out of the moses. The pith of one of the latter, though much shrivelled and withered, is 12½ inches in circumference at the root.

Lismore (*i. e.* Great Garden) has always been celebrated for its fertility. The crops raised are oats, barley, beans, flax, potatoes; and of late a few green crops and grasses have been successfully cultivated. A great proportion of the arable land is under *beans*, a circumstance uncommon in the Hebrides; and they are found to answer pretty well twice or thrice successively in the same fields. After beans two crops of oats are taken, and then potatoes are planted in drills, and not unskillfully managed. Eight bolls of beans and 16 of potatoes are a good crop; and these have of late averaged a value of from L.10 to L.12 Sterling on the best parts of the island. The valued rent is L.268. 13s. There is nothing particularly interesting in this island excepting the lime works, lately carried on by a company, who prepare that article at a very moderate rate for the public.

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The barrel of lime costs only 10d. at the place of shipping, so that, as it is of good quality, there is a great demand for it from the adjoining districts. The population of Lismore Isle is one-third of that of the parish of the same name, or nearly 1200 souls.

18. MONK, OR MUCK.

Dean Monroe.—"Swynes' Iyle, be ane haffe myle of sea to this iyle (*i. e.* Eilean-nan'each, a small islet belonging to Monk), lyes ane ile of twa myle lang, callit in Erische, Eillea-na-Muchd, that is, the Swynes' Ile, and very fertill and fruitful of cornes and grassing for all store, and verey guid for fishing, inhabit and manurit, a good falcon nest in it. It perteynis to the bishope of the Iyles, with ane guid Heighland haven in it, the entry quhereof is at the west cheik." Buchanan mentions merely what the Dean communicates, and Martin nothing at all.

This beautiful little island is seen from the point of Ardnamurchan and Sound of Mull, extending nearly three miles east and west, and from one quarter of a mile to two miles in breadth. It contains about 1800 Scotch acres of good pasture and corn land, fit for producing every sort of Hebridian crops, and always remarkable for fertility. The greatest inconvenience of this island is the want of fuel. The inhabitants are obliged to import peats from Eigg and Rum; and when
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in want of peats, they have recourse to the use of cow and horse dung, sea-tangle, dried weeds, &c.; and are often reduced to the greatest distress by want of fuel. They have no mill on the island: Indeed, they in many things resemble the people of St Kilda in respect of accommodation, though they are within one-twentieth of the distance of those islanders from the continent of Scotland. The island is the property of the family of Clanranald. The population in 1808 was 184 souls. The valued rent of Monk, Rum, and Cannay is L.87. 10s. 7d.

19. EIGG.

Dean Monroe.—" Egga.—North from Ellan-muchd be foure myles lyes ane iyle, called the iyle of Egga, foure myle lange, and twa myle braid, guid maine land, with a paroche kirke in it, and maney solan geese, and very gude for store, namelie for sheip, with a haven for Heighland bottis." Martin says that its length is 3 miles and its breadth $1\frac{1}{2}$; but it is in fact $6\frac{1}{2}$ miles long and from 3 to 1 broad, the average being very nearly $1\frac{1}{4}$. Its contents are about 5500 Scotch acres. The coast is in general bold and rocky, the soil very fertile, and susceptible in some parts of the most regular husbandry, and capable of yielding crops of oats, barley,

barley, potatoes, flax, turnips, and grasses of every description adapted to the climate of the Hebrides. The water of mostly all the springs of Eigg is excellent, and hence perhaps the uncommon beauty of skin and whiteness of teeth observable among the natives. Dr Walker found 457 souls in Eigg in 1764. The numbers have not much increased since that time, being at present about 500; nor, indeed, is there room for a great increase of population. There is no good harbour nor roadstead for vessels of considerable size, but boats and sloops of a light draught may anchor in the sound of Castle-island, at the south-east extremity of Eigg. The horses of this island are very handsome, and uncommonly hardy and durable. Considerable quantities of wool and a few horses are exported to Uist, and bartered for barley and other commodities from that island.

Eigg suffers great inconvenience from the want of a wind-mill, there being no run for the rivulets of the isle sufficient to enable them to turn machinery. The inhabitants are therefore obliged to send their corn 9 or 10 miles by sea to be ground in Arisaig; and often suffer very serious losses and incur great risks on the voyage. They have no regular communication with the mainland of Scotland, or with any post-office, and consequently must suffer the various impediments to improvement, which want of communication with their countrymen involves. The clergyman of Eigg, commonly called minister of the *parish of Small Isles*, (*i. e.* Monk, Eigg, Rum, and Cannay, comprehending a solid landed estate of more than 30,000 acres!) has the most arduous ecclesiastical duties to perform of all the

clergy perhaps in the Christian world. He undergoes dangers and fatigues, indeed, sufficient to terrify a dervise or a faquir of Hindostan. His manse and residence is in Eigg. He must preach and discharge other sacred duties in their turn in all the other isles, at all seasons of the year. His voyage to Cannay, for the purpose of preaching a sermon there, is 24 miles going and 24 returning, supposing the wind to be as favourable as possible; but, at an average, may be fairly calculated 30 miles both ways, or 60 miles in all, around the terrific and boisterous island of Rum, where there is not a single harbour, in case of bad weather, which a boat dares enter, excepting the dangerous and exposed one of Loch-scricssort: The expence of that voyage cannot fairly be calculated at less than two guineas, exclusive of wear and tear of boat, rigging, clothes, &c. and of the great risk which is run by himself and his boat's crew. It is unnecessary to state in detail the various hardships to which that reverend gentleman is exposed,—or to mention that his worldly remuneration is *scarcely* *£. 120 per annum!*

There is a Roman Catholic clergyman resident on this island also, who has similar toils to undergo, at least as far as Cannay is concerned, (there being no catholics in Rum or Monk,) and, alas! he must toil for a still smaller pittance, or rather for the consciousness of doing his duty. Both are men of finished education and manners; and no man who visits those isles can leave them without regret for their toils and admiration for their virtues. There is no situation in Britain which more loudly calls for the interposition of a benevolent public, for helping them to procure a packet-boat

packet-boat from Arisaig, and to support schools on the different isles, to be taught by persons licenced to preach the gospel, than that of the inhabitants of those small isles. The islands hitherto described belong politically to Argyleshire; but Eigg is attached to Inverness-shire, and was formerly a part of the parish of Sleat in Skye. In an agricultural point of view, this island does not merit any particular notice; but to the traveller and natural historian it is well calculated to afford a rich feast. The various caverns, the astonishing and stupenduous precipices of basalt, pitch-stone, free-stone, lime-stone, and other minerals; and, above all, the magnificent perpendicular rock, called Scourr-Eigg, which stands like a threatening tyrant upon the prostrate isle, yield scenes perhaps unparalleled in Britain.

Considerable quantities of kelp are made in Eigg, especially on the western side, where there is a beautiful semi-amphitheatre fenced with a natural inclosure of rock, equally adapted to the cultivation of corn and the manufacture of kelp.

20. RUM.

Dean Monroe.—"Ronin. Sixteen myle northwast from the ile of Coll, lyes ane iyle callit Ronin ile, of six-

teen myle lang and sixe in breidthe in the narrowest, ane forrest of heigh mountains, and abundance of little deire in it, quhilk deire will never be slaine dounewith, but the principal saitts * maun be in the heighth of the hill, because the deire will be callit upward ay be the tainchell, or without tainchell they will pass upwart *perforce*. In this iyle will be gotten about Britane als many wild nests upon the plane mure as men pleasis to gadder, and yet by reasson the fouls hes few to starte them except deir. This iyle lyes from the west to the east in lenth, and pertaines to M^cKenabrey of Colla. Maney solane geese are in this ile." Martin and Buchannan scarcely mention Rum. Dr Walker found its population in 1764 to be 304 souls; they have increased considerably since that time, and now approach to 350.

This island is the most mountainous and rugged of all the Hebrides, Jura itself not excepted, and ought to be entirely converted into a sheep walk or a deer park. Its extreme length, from south to north, is nine miles, and its average breadth five; comprehending a space of upwards of 22,000 Scotch acres.

In point of agriculture, it is one of the most backward of all the Hebrides, nor is this in the least degree surprising. The surface of the island is so rugged, its
climate

* Saitts were walls of stone gradually approaching each other, built by the ancient Caledonians for catching deer and other game.

climate is so boisterous and rainy*, and there is such a scarcity of manure, that it would be a very difficult matter to prosecute agriculture with any advantage, even supposing it peopled by a colony from East-Lothian or Berwick. But although in general unfit for agriculture, and especially for white crops, there are some hundred acres of good low-lying land in the sheltered vallies, where green crops and grasses might be cultivated with success. Were the island, therefore, in the possession of three or four families, and stocked with a hardy breed of sheep, it would pay four times its present rent; and 300 individuals, who are now a dead weight upon Mr Maclean of Coll the proprietor, and cannot maintain their families in any tolerable degree of comfort, would elsewhere seek for labour and subsistence. The proprietor attempted to introduce sheep instead of the black cattle and horses; to which the natives have been accustomed, and they answered exceedingly well, but the prejudices of the inhabitants soon overcame their reason; and, as the landlord was not on the spot, or in a condition to superintend and enforce the system of sheep-farming, they soon returned to their former live stock and their ancient habits. In an agricultural light, therefore, Rum is a blot

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* Conversing with a young man at the head of Loch-scraissort in 1807, during a *down-pour* of rain which had persevered in deluging the island for a week, the reporter asked, "Does it perpetually rain in such torrents in Rum?" He answered, "Cha bhi, ach sneachda na-uathriobh," *i. e.* No Sir, not always torrents of rain, but sometimes of *snow*.

on the map of the Hebrides; and its population, however simple and virtuous, are in their present state a dead stock to the community and to themselves. Although Mr Maclean should not exact a shilling of rent from an island that might, if under a sheep stock, pay him L. 1200 or L. 1800 per annum, the natives would be poor and miserable; so that there is no resource but to turn them off in some way or other. What has been stated with regard to Coll holds true, in a still more palpable way, of Rum. The proprietor's humanity prevents him from depopulating this island, although his good sense must convince him that his benevolence is, in the long run, cruelty to the poor creatures whom he feeds at his expence, and a loss to the community, who are deprived of the population in question as effectually, in every point of national resource, (useless militia service only excepted,) as if they lived in Borneo or Sumatra.

With respect to the mineral productions of Rum, some travellers imagine that they might be turned to good account, were there a possibility of having easy and safe access to them. At the foot of Sgurmôre, opposite to Cannay, are found abundance of agates, of that species called by Cronsted *achates calcedonisans*, improperly *white cornelians*: Several singular strata, such as grey quartz-stone; another, a mixture of quartz and basaltes; a black stone spotted with white like porphyry, but with the appearance of a lava; fine grit or free-stone; and the cinereous indurated bole of Cronsted.

The only harbour in Rum is Loch-screissort, on the east coast, and due west of the point of Sleat in Skye. This harbour bears east and west, and runs a considerable

able way into the island. It is not difficult of access, but rather open and too much exposed to the south-east and north-west. There are some sunken rocks on the south side of the entrance; between these rocks and the north side are about three-fourths of its whole extent perfectly clear, affording tolerable room for tacking vessels in and out of the loch. This harbour is not much frequented, as mariners are always afraid of the squalls which rush from the lofty mountains and rough shores of Rum, and accordingly keep at a respectful distance from every part of its coast; but in bad weather we have run into it with safety, and found good anchorage, and, what was not expected, a pier or quay at the head of the loch.—Rum belongs to the county of Argyle.

21.—CANNAY.

Dean Monroe.—"Be twa myle of sea towards the northweist, towards the Isle of Ronin, layes an ile callit Kannay, faire maine land, foure myle lange, inhabit and manurit, with paroche kirke in it, guid for corne, fishing, and grassing, with a falcon nest in it, pertines to the abbot of Colmkill.' Buchanan merely names Cannay; and Martin mentions the celebrated compass hill taken notice of by Pennant and all other travellers.

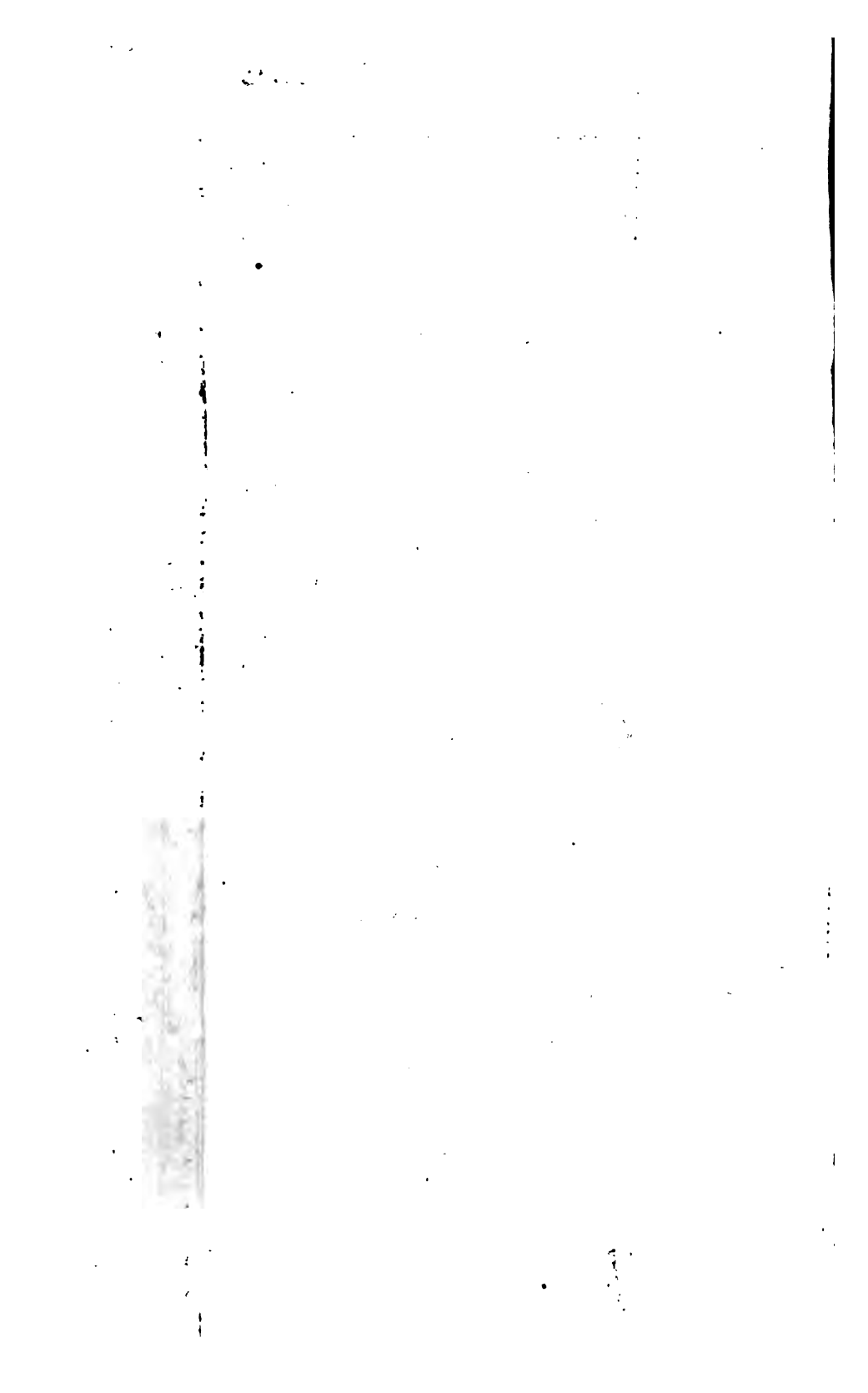
22.—SKYE, WITH RAASAY AND RONAY.

Dean Monroe. “SKY,—North fra the ile Soa-vret-till, be twa myle of sea, lyes the grate ile of Sky, tending from the south to the north to forty twa myles, roughe and hard land; that is to say, from the south poynt of Sleitt to the north poynt of Tronternesse, and eight myle braid in some places, and in uther places twalve myles braid. In this ile there is twalve parochie kirkes, manurit and inhabit, fertill land, namelie for aitis, excelleng aney uther ground for grassing and pastoures, abounding in store, and of studds in it; maney woods, maney forrests, maney deire, fair hunting games, maney grate hills, principally Enilvelimi and Glannock. Within this isle ther is gud take of Salmant upon five waters principally, to wit, the water of Sneisport, Sligaban, Straitwardill, Ranlagallan, and Kilmtyne, with seven or aught uther smaller watters, quherupon salmont are also slaine. In this ile ther is ane freshe water loche, callit the Loch of Glenmpire, quheron ther is abundance of salmont and kipper slaine. Within this ile of Sky ther is five castills; to wit, the castill of Dunbeggan, pertaining to M^cCloyd of Herryay, ane starke strengthe, biggit upon ane craig; the castill of Dunnakynne, perteining to M^cKynnoun; the castill Dunningill, perteining to the said M^cKynnoun; the castill of Camus in Sleit, perteining to Donald Gromsone; the castill of Dunskey, perteining to the said Donald



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Donald Gromsone; and the castill of Donntwyline, pertaining to Donald Gromsone likeways. Within this ile ther is seven sundry countreys; to wit, Slaitt, pertaining to Donald Gromsone; Straytsnardill, pertaining to M^cKynnoun, quhilk lies next the Sleitt; Menzenise, pertaining to M^cCloyd of Herrays; Brachodill, pertaining to the said M^cCloyd; Watterness, pertaining to M^cCloyd of the Lewis; and Trontieness, pertaining to Donald Gromsone. Into this ile there is three principal salt water loches, to wit, Loch Sleigachan, Loch Downort, and Loch Sleippan. In thir three principal loches there is a guid take of herringes, for by thir three principal loches, there is thirteen salt water loches, also within this ile, to wit, 1. Loche Skahanask, 2. Loche Emor e, 3. Loche Vrakdill, 4. Loche Kensale Serloss, 5. Loche Dunbegan, 6. Loche Gorsarmis, 7. Loche Arnoffert, 8. Loche Snasporte, 9. Loch Portri, 10. Loche Ker, 11. Loch Nadalae, in Sleit. The uther twa loches my memorey has fayled of them; but in mony of them ther is guid tack of herringes sometymes, but nought so good by far as in the three first loches. This ile is callit by the Erische Ellan Skyane, that is to say in Englishe the Wingitt ile, be reason it has maney wyngs and points lyand furth frae it, through the devyding of thir loches." The little that Buchanan writes upon Skye, is a literal translation of Dean Monro's words; nor do we find any thing particularly worthy of notice in other Scotch writers, or even in Martin's long description, posterior to the age of the venerable Dean.

Skye, although not the most extensive (as is commonly supposed) is undoubtedly the most important
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and populous of all the Hebrides : It is also, excepting Lewis, the largest Its length from the point of Sleat to the northern extremity of Trotternish, called Ru-Hunish, is by the common road 75 miles, but as the bird flies 54, and its breadth varies from 25 to 3 miles, the average being 13. These dimensions give an area of about 700 square miles, or 350,000 Scotch, or 448,000 English acres. Of this extent about 30,000 Scotch acres are arable, i. e. either occasionally cultivated or susceptible of aration; the rest consists of mountain and hill pasture, rocks, lakes, morasses, and waste lands of every description common in the Western Isles, excepting blowing sands. The population is annually increasing, and amounts to 18,975 souls, which gives 18½ acres to each individual.

So much is this island indented in all directions by arms of the sea, that its coasts, including those of the islands which may be said to belong to it, following the high water or sea-mark, are about 750 miles. The shores of two of those inlets or lochs, namely Loch-Snizort and Loch-Bracadale, measure 160 miles.

The general aspect of Skye is now upon the whole what travellers describe it, disagreeable, rugged, bare, barren, and mountainous; although it cannot be denied that these expressions apply to some districts of it; it is, on the contrary, in many parts verdant, romantic, and highly beautiful and even rich; as for instance, the entrance and whole course of the large inlets just mentioned, Loch-Snizort and Loch-Bracadale; the whole course of the Sound of Raasay, the greatest part of the coasts of Trotternish, Slate, Waternish, and Diurinish; and various parts even of Minginish and Strath. It is
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in truth a singular island, well deserving the attention of the geologist and natural-historian; and capable by nature of one day astonishing the patriot and political-economist. On this account we shall state its present situation under the following heads, viz. 1. Its natural advantages. 2. The causes why these have not produced the effects which might have been expected. 3. The improvements commenced; and the most probable means of promoting them.

1. *Natural Advantages of the Isle of Skye.*—With regard to position, this little principality lies in the centre of the Highland or Celtic population of Scotland. It is at an equal distance from the southern extremity of Kintyre and the northern one of Caithness, and from the point of Islay and that of Lewis. A vessel sailing from any of its numerous ports can reach Leith, Greenock, Liverpool, or Dublin, in 5 days, and is rarely wind-bound in the island; because the westerly winds enable it to sail either south or north; and the goodness of the harbours and the shelter afforded by the Long Island on the west, and the continent of Scotland on the east, is such, that the sea never rises to a swell which would prevent a vessel from working and tacking out of port. These are circumstances highly favourable to a district in which the herring and white-fishery may be prosecuted to an indefinite extent; and from which lime, marble, kelp, live-stock, flax, hides, and various other commodities may be exported in considerable quantities.

The position of Skye, so favourable for maritime intercourse with the British dominions, and also with
America

America and the north of Europe, is greatly enhanced in a political point of view, by the immense numbers and uncommon excellence of its harbours. These are so well known that we need not dwell upon any description of them. One remark, however, occurs:—It is frequently a matter of deep regret, that vessels cast ashore or otherwise damaged on the western coasts of Scotland, and especially in this neighbourhood, are from the want of dry-docks abandoned and lost as total wrecks, although perhaps their damage may have been easily repaired, could they have access to proper accommodation. The bason to the south of the village of Portree in Trotternish, immediately adjoining to the excellent harbour there, would answer extremely well for a dry dock and place for cleaning and careening vessels of every description. The harbour at Isle Oronsay in Slate might also receive a similar improvement, although it is not perhaps so well calculated for dry docks as Portree.

The eastern coast of Skye, with its numerous lochs or arms of the sea, which form a vast number of harbours, is by nature so placed relatively to the mainland of Ross-shire and Inverness, that it serves as a huge herring-net or trap, not only for itself, but also for the opposite coast, by forcing the shoals of those fish which annually leave the northern seas and migrate southward into every inlet on both sides of the Sound. The distance from Ru-Hunish to the opposite coast of Ross-shire (the mouth of the herring-trap alluded to) is 25 miles; whereas the head of the same trap at Kyle-rea, between Glenelg and Strath, is only half a mile. When once the shoals of herrings have fairly entered this vast
bason,

bason, they cannot get back ; and, of course, as this present season (1810) they yield a rich and abundant harvest to the inhabitants of Skye and the opposite coast, as well as to the country at large.

The lochs and harbours in question are so numerous, and we may almost say, so providentially distributed in this large island, that no spot in it is four English miles from salt water. What a vast advantage would this be in the event of woods and plantations, or mines and minerals being turned to proper account ? And what an immense facility does it afford for the intercourse of the natives by water, and the carriage of manures, fuel, and all bulky commodities ! In short nature has here made those canals for intercourse and communication, which in other countries cost years of labour and millions of expence. In mentioning the lochs and harbours, we must not forget their valuable productions in sea-weeds, sea-ouze and shells for manure,—their shell-fish, salmon, sea-fowls, and the mildness of temperature which such lakes preserve in the atmosphere, even in the most rigorous winters :—To this may be added, the great facility which they afford for inclosing ground for woods and plantations, by forming a vast number of promontories and peninsulas, in which some thousand acres may, in many cases, be inclosed by half a mile of stone dyke.

Climate.—A gentleman from Norway, after spending the months of December, January, February, and March, in Skye, and always complaining of the want of frost and snow, asked at last with some impatience, When shall we have winter ? In truth, the climate of
this

this island is remarkably mild in proportion to its latitude, and the altitude of its mountains, some of which are 3000 feet above the level of the sea, and retain snow on their summits all the year round. In other respects, indeed, we cannot say much in its praise. It is boisterous, uncertain, and in some districts extremely rainy. Yet green crops and wood of all kinds would thrive in this climate when other parts of the kingdom suffer severely from frosts and chilling easterly winds.

Soil.—A stranger who takes only a cursory glance, or a superficial view of Skye in its general aspect, would smile on hearing any compliments paid to the soil of that island; yet nothing is more true than that it has great advantages over most of the Hebrides, and, indeed, the general run of the Highlands of Scotland in this respect. In some districts in Trotternish, Strath, and Sleat, land under very indifferent management, undrained, uninclosed, and unmanured, has been for generations under white crops, and yet still preserves a wonderful degree of fertility. All the common crops of the best Scottish counties thrive in Skye; and if in most parts the soil is too light for wheat, and the climate rather moist and boisterous for white crops in general, yet various districts, especially Trotternish, are fit for every species of Scotch produce, and the portions of the country which are at a distance from the lofty mountains, enjoy as good a climate as most other parts of western Scotland. The soil is diversified beyond example, both in surface, composition, and quality. No county in Britain is more so; indeed, to enumerate the various qualities of it, would be to give a mineralogical analysis

analysis of the British island. We have already mentioned enough upon this subject ; and therefore it suffices to say, that the soil of Skye is abundantly rich for producing the crops most necessary and proper for its population and live stock, namely, wheat, oats, barley, flax, hemp, potatoes, peas, beans, turnips, cabbages, green crops of all kinds in perfection, and grasses of every description, from those which grow on the Alps 4000 feet above the level of the sea, to such as delight in the amphibious marshes of Holland. The climate of this island, however, suggests that the preference should be given to green crops, and that no more white crops should be raised than are indispensibly necessary for the food of the inhabitants.

Natural manures of various sorts abound. Marl and marble earth, shell sand, sea weeds, and sea-ouze or sleech, may be procured on most farms in profusion. Limestone, slate, marble, lead ore, iron ore, free-stone, granite, porphyry, allum, and fuller's earth, coals, peat moss of every description and quality known in Britain, and various kinds of dye-stuffs, occur in many parts of the island ; and the mineral springs, caverns,* spars, and petrifications, are undescrivable and infinite.

The soil of this island is in general particularly well calculated for the growth of timber ; and, from its boundless variety and extent, may afford a sufficiency not only for its own consumption, but also for that of the Long Islands.

8 B

Live

* The cavern of Strathaird, so well known, and of late much frequented as a great natural curiosity, contains spars and crystallizations as beautiful as those of Derbyshire.

Live Stock.—The peculiar advantage of this district over the Lowlands, and many parts of the Highlands of Scotland, with respect to its live-stock, is the fineness of their form, the hardiness of their constitution, and the cheapness of rearing them. The last circumstance, no doubt, admits of various modifications, but it may be said with truth that, upon the whole, the domesticated animals may be brought up to a marketable size and strength at less expence in Skye than any where else in Scotland, in proportion to their value; and consequently that the soil and climate are particularly propitious to that department of rural economy.

The number of black cattle in this island varies greatly at different periods of the year: It is probably at an early period of winter about 18,000 head, of which one-fifth, or 3,800, are annually exported. These, at an average of L.5. fetch L.19,000, which constitutes the principal fund for paying the rents of the land, and the price of meal, and other articles imported. It is true there are other resources, especially the fishery and the kelp manufacture, of which the inhabitants avail themselves, but their principal dependence is upon the sale of their black cattle. The number of horses is comparatively small, and ought to be still smaller than it is. They are stated at 4000 head by persons well acquainted with the island, but they yield little profit as an *item of export*. They are very hardy and durable, and average a value of L.7.

Sheep have lately been introduced as farm stock at Strathaird, Rowandounan, Gesto, Talisker, &c. and they promise to do well. They are indeed the only proper stock for the Cuillin mountain district, and various

rious other parts of Skye, and probably will increase in the island for many years, until they shall have occupied all the rugged, moorish, and hilly tracts of it. Both the Tweedale and Cheviot breeds have been found to thrive; but the former, being the most hardy, is the greater favourite. The number of sheep in Skye amounts to perhaps 40,000, but this is a mere guess, and so is their value, which we have had stated by the natives at 12s. a-head.

Hogs, goats, rabbits, &c. and some deer are found in Skye, but not in sufficient numbers to compose a source of revenue, or to add essentially to the live stock of the country. Game and grouse are not so abundant as in former times; for in proportion as the population increases, and domesticated animals are attended to, game of every kind is uniformly seen to diminish and die away. Dean Monroe's account of *forests and deire* has no longer any application to Skye, where only a few stragglers of the last mentioned are known to lurk among the recesses of the Cuillin mountains, but no herds of them of any consequence are ever seen as in former times.

Agricultural Management.—With a few exceptions, which have been already mentioned, this island is wretchedly mismanaged with regard to every thing connected with agriculture. Grazing is, indeed, somewhat attended to, but not in many essential points. No green food is raised for winter provender, further than potatoes and a little hay. These are never sufficient for the adequate maintenance of live-stock during the winter and spring months; and accordingly one-

seventh of the stock perishes either from immediate want, or from distempers resulting from scanty and unwholesome subsistence during that period. White crops are raised upon the same fields successively as long as they have vegetative powers for yielding two or three returns for the seed sown on them, and they are then left after several years of cropping, to recover their fertility spontaneously, without any dressing or manure. In several parts of the island twenty crops of barley and ten or twelve of oats have been taken from the same ground without intermission, while the outfield, which would improve by occasional cropping, has been left to run wild, without any tillage or attention whatsoever. The farms have a number of small tenants upon them, who possess the arable land in common, and whose cattle in certain proportions, according to their rents, pasture also in common.

No land, however naturally good, can bear this treatment, and the effects are visible even on the most fertile farms in Skye.

Such are the most palpable natural advantages of this island. We proceed, 2dly, to point out some of the causes which have prevented them from producing the effect that might have been expected from them.

In accounting for any defects in the management of a country or district, we are naturally inclined to lay the blame upon the inhabitants at large, or upon persons of influence among them: But we cannot here have recourse to that compendious mode of reasoning. The people of Skye are as acute, active, and sagacious, as any other portion of the British population. No men make a better figure abroad, in peace or war, than those

those of this island, and perhaps no district, of the same resources in our empire, furnishes a greater number of soldiers and sailors, of whom their country has good reason to boast. They are numerous and distinguished among our military force in every quarter of the globe, and even the lower classes, who accompany the better educated young men of family, share with these last in doing honour to their country. It is, indeed, only *at home* and as *farmers* that the natives of this island fail to make a conspicuous and respectable figure; and we are happy to say that some of them already mentioned in this report, and a few who have not had an opportunity till very lately, of attempting agricultural improvements, are in a fair way of removing the reproach which, in respect of agrestic exertion, has hitherto attached to their country. But besides the causes connected with the state of society, and which we have already mentioned in pages 74, 75, &c. there were others which served to impede the agricultural advancement of Skye. Of these the principal one has been the non-residence of the great proprietors Macdonald and Macleod. The present Lord Macdonald has indeed shown every disposition to improve his princely property in Skye: he has sent lowland farmers thither to teach his tenants the improved modern system of tillage; he has done what he could for the roads, bridges, and other public accommodations of his people, and been at great expence in building lime-kills, quays, churches, &c. upon his estate, as well as in planting trees, and carrying on other improvements, as an example to his tenants. He resides also occasionally among them, and takes great delight in seeing their

prosperity and contributing to it. But alas ! he has had every thing to begin and *to force*, if we may so speak. Neither inclosures, drains, or fences of any kind worth mentioning, existed on his immense property. The small tenants held their lands in runrig, in the most confused manner imaginable ; and they were crowded in hamlets or villages, which although nearly as uncomfortable as those of the Indians of America, occupied a very large portion of the finest soil on the estate, and that too on the central and most important spots of every farm. He has also had the same difficulty of redundant population to contend with, which we have mentioned in the case of the isles of Coll and Rum, more especially in the district of Trotternish, which is the best part of Skye. In these circumstances it has been what we vulgarly call up-hill work for his Lordship to effect any salutary reforms, and these are consequently slow and gradual.

Macleod, the next proprietor in point of property in the island, has not for many years resided regularly, or indeed for any length of time upon the estate. He is only just come of age. His father was long engaged in his country's service abroad ; and although an active, intelligent, and accomplished man, as well as a sound hearted highland chieftain in the best sense of the term, he had no opportunities of doing much good to the island.

The estate of the ancient and gallant family of Mac-
kinnon was lost to them by mismanagement or misfortune, and absorbed in the great Macdonald property, excepting about 20,000 acres which are now in possession

sion of Mr Macalister of Strathaird. The same causes which prevented the improvement of the M'Leod estate, and which still impede those of Lord Macdonald's, continue to operate upon the lands which have been alienated by the ancient families of Macleod and MacKinnon, and which are now in the possession of eight or nine smaller proprietors, very few of whom reside upon their properties.

Next to the non-residence of the principal proprietors, and the circumstances just mentioned as unfriendly to improvement, the greatest obstacle to the prosperity of Skye, was a total want of roads and extreme difficulty of communication with the more advanced quarters of the kingdom. Without roads it is idle to think of improving a Highland country. Those of Skye are now carrying on with considerable spirit; and the road from Glenelg to Fort-Augustus, the direct channel of communication with the lowlands and South Britain, is likely to be soon finished. Lord Macdonald has generously subscribed L.1000 Sterling to this road, the largest sum perhaps subscribed by any nobleman or gentleman for a road to be made upon other peoples' property. In this respect, indeed, as well as in many others, his Lordship, and those gentlemen by whose advice he acts, have shewn every disposition to promote the advantage of Skye, as well as of the Highlands and the country at large. It must be added, to the credit of Macleod and the proprietors of Skye and the Long Island, that they have handsomely subscribed to this road, the finishing of which will be the grand step in the improvement of this magnificent island.

In enumerating the causes which have impeded the improvement of Skye, we might mention such as are common to it with many other islands, viz. the want of manufactures,—the scarcity of artisans and tradesmen,—the want of towns, of a custom-house, quays, markets, &c. : but these are closely connected with the third and last part of the subject which was proposed to be handled in this part of the Report, viz.

3. The improvements commenced, and the most probable means of promoting them.

All improvements must be consistent with the natural properties of the district, and be suggested by them :—Those of Skye must therefore proceed upon the principle of attending to what has already been suggested with regard to the circumstances of the island. They must be founded upon, 1. Its position,—2. Its physical properties, its climate and soil,—3. Its productions and political situation. Of these in their order.

1. The position of Skye ought to entitle the island to several packet boats from the continent of Scotland, and to roads from the following places, viz. a direct road to Inverness by Strathglass, and another by Loch Carron ; a road in nearly the old military line by Glenelg and Raatachan to Fort-Augustus ; and a road, with as few ferries as possible, to Fort-William. There should be a regular packet sailing from Arisaig to Armadale in Sleat, and to Isle Oronsay there, touching occasionally at Eigg and Loch-sceissort in Rum, especially in summer and autumn : another regular packet should be established between the Kyles of Skye, and Sconser, Portree, and the different harbours of Lord Macdonald's estate, which, in good weather, might sail round

round Trotternish once a-week for the accommodation of that populous district. A packet should be established between Loch-snizort and Lochmaddy in North Uist, and to sail once a month to Rowadill in Harris, or to Isle Glass there. The communication should be equally regular between Loch-Bracadale in Macleod's country, and the opposite part of the Long Island, *i. e.* South Uist and Barray. These packets would carry fish, lime, cattle, &c. from one district and island to another, and prove of more essential consequence to their improvement than the natives are at present aware of. They are indispensable to the maintenance of communication and of commercial spirit in this sequestered region.

2. Its physical properties, climate and soil :—The Isle of Skye ought not to be considered merely as a grazing district, or as excluded, by the nature of its soil and climate, from a possibility of conjoining the pastoral with the agricultural departments of rural economy. The greater part of the low grounds of Trotternish, Strath, Sleat, and even of Macleod's country, is extremely well calculated for corn husbandry, at least in so far as to supply their present population with bread. These, as well as the general run of the island, are indeed better adapted for green crops and grasses, than for white crops; but both kinds might be cultivated in proper rotations to great advantage, and mutually aid in improving and increasing the live stock of the country. The physical situation of Skye demands *shelter* as one of the most essential parts of its improvement. In every case, therefore, where materials can be procured for them, dykes, inclosures, hedges, and strips of planting ought to be raised; and, for that purpose, fencing clauses

clauses ought to form a part of every lease, and all encouragement should be afforded the tenants for sheltering their grounds. No farm steading or garden should want trees, even though the extent of such inclosure should be ever so limited; and the landlord, or his factor, ought to look more sharply after stipulations connected with fences and trees than ever has been customary in those isles.

Next to shelter and defence, the most necessary process demanded by the natural state of this country, is draining. The heavy rains which frequently annoy Skye render draining equally necessary and difficult. Covered drains will seldom answer any good purpose in the hilly grounds; and even the largest open drains are liable to serious accidents from the inundations of this rainy atmosphere. They must however be tried, and maintained as well as the occupier of the ground can afford. Proprietors ought to help their tenants in carrying on this improvement as well as the one last mentioned; for it is a very tedious, expensive, and precarious operation; and although it may reward amply in the end, it often subjects the performer to the most mortifying disappointments.

The physical state of Skye suggests great care and attention in building and roofing all sorts of houses. This is a matter of essential importance to the landlords and tenants, but has unluckily been too long neglected. That neglect has been a great source of loss to both parties, and has retarded, more than they have imagined, the general improvement of the island. Straw thatch should never be used but in cases of extreme necessity; and when used, it ought to be skilfully put on,
and

and not in the Hottentot style of the present inhabitants of Skye and the Long Island. Mr Mackinnon of Corry has thatched his office-houses with heather in a capital style, and shews all the people in his neighbourhood what may be done at a moderate expence in that way.

With regard to the sort of live stock which is most proper for the climate and physical properties of this large island, the inhabitants have always manifested good sense in their selection. Their breed of cattle and horses is excellent, and requires only to be preserved from deterioration and decline, by maintaining the best individuals as breeders, and by improving their food in quality, and increasing it in quantity. More hogs and poultry might be raised ; and bees would answer well in some farms in Trotternish and Macleod's country, at a distance from the high mountains.

The climate and soil, as has already been mentioned, point out the propriety of conjoining the pastoral, with what is commonly called the agricultural system of management. Both soil and climate would be much improved by plantations, inclosures, and draining ; indeed more so than is easily conceivable by a person who has not examined their astonishing effects in other districts. In Cumberland and Wales, countries which greatly resemble Skye in soil and climate, the improved districts seem to enjoy a different latitude and richer materials of composition than those which have been neglected. The same would speedily be apparent in this island, and indeed begins already to be perceptible in various parts of it. However paradoxical and fanciful it may appear to maintain, *that a climate may be amended and improved,*

proved, yet we are fully convinced of the truth of the assertion. Where woods are raised, storms become less frequent and noxious ; where marshes, lakes, and moist grounds are drained, mildew, hoar-frost, and other injurious properties of a humid atmosphere, lose much of their pernicious effects ; and, in course of time, disappear altogether ; while, on the other hand, a country neglected, and allowed to be covered with water, or to be deprived of its woods and inclosures, loses much of its former advantages of climate, and produces less ample and later harvests. The proprietors and farmers of Skye should therefore improve their climate and soil by planting trees, by building dykes, and by draining their lakes, morasses, peat-mosses, and meadow grounds. It is easy for a stranger to give this advice, and also for a landlord in this island to blame his tenants for not taking it, but the question is, Who shall be at the trouble and expence of draining ? It is certainly the interest of both parties that the ground should be fenced and drained ; and it is therefore the duty of the landlord to put it in the tenant's power to promote that mutual interest. The tenant himself cannot otherwise afford the expence ; and, besides, he would thereby only tempt other people to overbid him for his farm at the end of his lease. Let the expence, as in Islay and the improved isles, in the first instance, be encountered by the landlord. Let him insure his tenant the payment of all his *permanent improvements* ; and in order that there should be neither mismanagement nor extravagance on the side of the latter, let the landlord or his factor agree with the tenant concerning the works to be performed, and the extent to which both can afford to go. After this

this agreement, let the tenant carry on the work ; for he can perform it, in most cases, at half the expence which it would cost the landlord, and his own interest will prompt him to finish it speedily and to execute it well. His landlord may pay him either at the period of settling his rents, or at the expiry of his lease, according to circumstances. In concluding our remarks upon this part of the proposed improvements in Skye, we would particularly urge landlords and tenants to erect quays, at convenient places, in their harbours, for saving their boats, and for various and sufficiently obvious purposes of accommodation to the different farms. These might indeed very properly constitute a part of the regular statute labour of the district.

3. Its productions and political situation should govern the inhabitants of this island in the prosecution of their economical improvements. Great as the natural treasures and the actual produce of Skye are, as has been already mentioned, they are not one-tenth of what they might become in point of value to the country. The minerals of the island are lost, excepting what Lord Macdonald has endeavoured to force into use in a few parts of his property, and a little marl, shells, and lime used by half a dozen of his tenants, and by Colonel Macdonald of Lyndale.

From want of winter food, the result of a careless and unskilful system of agriculture, the live stock of Skye is not worth quite two-thirds of the same sort of stock in Islay and some other of the Hebrides : They are later in coming to market,—less fit for it in every sense,—and, what is a severe loss to the people in general, they remain

remain a year or two longer upon their hands, and are consequently reared at a comparatively heavier expence than the stock of the isles to which we allude. This is peculiarly hard and unfortunate, considering the circumstance stated already concerning the Skye cattle and their advantages, namely, that they may be reared at a cheaper rate, both from the native excellence of the breed, and other properties of the country, than in any district of Britain with which we are acquainted. It proceeds solely from the scarcity of winter provender, and the want of turnips and green crops, for which, notwithstanding, Skye is particularly well adapted.

Woods and plantations have hitherto been, upon the whole, much neglected. These, as natural productions, might constitute the most valuable possessions of the island. They might indeed soon prove incalculably profitable both to landlords and tenants, and will, it is to be hoped, gradually attract the attention which they deserve. Lord Macdonald, and some of his tenants already named, manifest every inclination to prosecute this important branch of agriculture, and the rest will soon follow their good example. Here, too, the proprietors ought to commence the great operation, and not only assist, but rouse and encourage their tenants to promote it by every possible means.

Fishing of every description ought to be prosecuted with more spirit than has been hitherto done. This last season, it is true, and also in the course of the four or five preceding ones, herrings have been caught to a considerable amount on the eastern coasts of the island, and in the lochs on the mainland which lie opposite, especially Loch Carron. The value of L.80,000
has

has been annually caught, and that of L.20,000 has been exported. It is not possible to ascertain the extent to which this great source of insular riches may be carried; but certain it is, that great impediments have been thrown in the way by the round-about process of securing salt, to which we have attended in p. 513, 514, &c. and by the want of regularity and system among the natives. This leads us to the consideration of the last thing proposed, namely, the political situation of Skye, and in what respects it might be improved. An island as extensive as most counties of the middling size in Britain and Ireland, and containing a brave and hardy population of nearly 20,000 souls, occupying a territory so replete with improvable materials, might be expected to have some political weight in the country,—to possess towns and villages, trade and manufactures, and to have some station regarded by the natives as a central point for the energy and industry of the district. With the advantage of having more than one half of it in the possession of a nobleman regarded at all times as the first proprietor in the county, and indeed in the Hebrides, and the head of a powerful and ancient clan, connected with many of the first families in the kingdom, and that nobleman, too, distinguished for his attachment to the patrimony transmitted to him by a long line of illustrious ancestors, we might expect the isle of Skye to be vested with at least its natural proportion of political influence in Scotland. But, alas! it is far otherwise—neither city, town, village, nor even custom-house, is to be found there. The population resides in scattered hamlets over the island, without any receptacle for their

their industry, or any thing done for their accommodation by a country to whose protection they powerfully contribute;—and, indeed, without feeling any thing of a legislature but the pressure of its fiscal enactments. It is in vain, however, to regret what is past. Let the present race wipe away the stain which has hitherto adhered to those who had it in their power to raise this fine island into importance, but have neglected their duty towards it. Let the legislature co-operate with the nobleman already mentioned, and not thwart all his plans. Let the rest of the proprietors join him, and let a town, with the privileges of a royal burgh, arise in Skye. Let the redundant population of Trotternish find work and industry there, and contribute to the improvement and honour of the island, which they now serve merely to encumber and to depress. What would Bate be without Rothesay, Lewis without Stornoway, or the Isle of Man without Douglas and its other towns? What an honour to Islay and to Mr Campbell of Shawfield are Bowmore and Portnahaven, and to Mr Maclean of Coll his thriving establishment in the north of Mull?

Nor is it a difficult matter to fix upon a number of proper situations for such town or towns as Skye at present requires. There is no island in Scotland possessed of so many, and which answer so well the description already stated in this work, of what the site of an Hebridian town ought to be*. The vicinity of isle Oronsay harbour, and the coast of Strath along the
sound

* Vide p. 499, 500.

which divides Skye from the mainland of the shires of Inverness, present the most desirable situation for all the Western Isles for fishermen, tradesmen, merchants, manufacturers, pilots, sailors, day-labourers, &c. The lochs of Skye and the continent of Scotland, south and north, are open to them, and of ready and speedy access. Vessels continually pass and

this sound, so that intercourse and communication with every port in Britain would be cheap and direct.

Intelligence concerning the fisheries would readily come from every district, from Caithness to the Firth of Man. In the very centre of a great population, at the same time at a considerable distance from any town or large village, persons of industry and capital would flock to this station from the adjoining parishes, which are now gradually coming under the improved farming system; and the place being in the reach of excellent white fishing, as well as of the lochs frequented by herring, would have a sure resource, even if the last mentioned fishery may chance to fail. In short, nothing could contribute more effectually to the benefit of the island, and the accommodation of its proprietors and natives, than a pretty large town situated near the kyles in question.

The next situation, and that which a stranger would perhaps fix upon as preferable even to the one now mentioned, is Portree. This place has the advantage of an excellent harbour, and of being the centre of the population of Skye. It is also the centre of Lord Macdonald's vast estate there; and it has a large quantity of waste ground near it, for being improved by the fishermen, and serving them at the same time for fuel.

Had the noble proprietor no intention of fixing his residence here, or of making what we commonly call a PLACE of Portree, by improving it, inclosing, draining, planting trees, &c. for the purposes of extensive parks and policies, it would indeed be a most eligible situation for a town. But of all the places which we have ever seen in this region of Scotland, Portree is by far the finest and grandest scene for a nobleman's mansion; and it is highly probable that the family residence will one day be fixed here. To grant *feus* or very long leases for building a town, (*without which it must be distinctly understood and always repeated, NO TOWN CAN EVER THRIVE IN THIS COUNTRY,*) in a situation of this kind, with regard to the proprietor, cannot reasonably be expected. His Lordship would afterwards be obliged to buy up the *feus* or leases, and to remove the town for his own accommodation: a matter which would prove equally hurtful to both parties. Portree cannot therefore be at present recommended for the scite of a Hebridian town.

Loch-Snizort presents various eligible spots for towns and villages. The harbour of Uig, in a beautiful bay of the same name, might be made sufficiently commodious at a moderate expence, and several other branches of this great Loch-Snizort might answer a similar purpose.

The harbour formed by Eilean Isa, near the lately erected but hitherto unfortunate village of Stein, is at too great a distance from the continent of Scotland, from the lately frequented herring lochs, and from the common track of shipping to and from the Baltic. These usually prefer the Uist coast to the bolder and
more

more dangerous one of Skye, in this vicinity. Accordingly, the village of Stein has from this, among several other reasons applicable to all the villages built by the British society, not fully answered the expectations of the public, nor the wishes of its late excellent patron General Macleod.

Loch Braccadale affords several good stations for villages, but a town of any consequence would not probably thrive at such a distance from the track of shipping, and from the mainland of Scotland and the herring lochs. It is to be observed, that although Loch Braccadale, as well as many other arms of the sea on the western shores of Skye, were formerly much frequented by herrings, they have of late been almost wholly abandoned by that capricious and squeamish fish : Consequently the reasoning which now applies to it, with reference to the purpose under consideration, may perhaps be of merely temporary force, and this loch, like Loch-Falloirt and Loch-Bay near Stein, may again become very proper situations for fishing towns. The presumption of durable expediency and success, however, is greatly in favour of building towns on the east and southern coast of Skye, and not on the western side ; and therefore Lord Macdonald's estate contains the stations upon which ultimately the choice will very probably fall.

The isle of Skye contains seven parishes : In Dean Monroe's time there were *twelve* ; and that number was small enough. There are very few schools regularly taught all the year round, and the number of children attending the parochial schools of the island, is less than we might expect in any civilized country in

Europe of the same population. How this comes to pass, a stranger may conjecture, but he cannot easily or without pain fix the blame exclusively on any particular set of individuals. The proprietors pay the schoolmasters salaries, or, which is eventually the same thing, their tenants pay them, being bound so to do by the conditions of their leases, and a suitable consideration being allowed them for this as for other burdens in the terms of such leases. The tenants pay not only the regular parochial salary now mentioned, and that too in parishes where no schools have been held for many years, but also *private teachers*, very high wages for the sake of their children: Indeed, if they did not, they would receive little religious or moral education whatsoever. Apparently, therefore, neither the proprietors nor tenants are to be blamed for the deficiency and irregularity of parochial schools in Skye. Are the clergy then indifferent or careless, and do they neglect one of the most valuable and sacred parts of their functions, the superintendence of the schools in their parishes, and the inspection of the moral education of youth? This would be a heavy charge; and although often brought against the Hebridian clergy on what appears to be plausible evidence, it cannot easily be believed by any man who is personally acquainted with that respectable order of our society. But while the proprietors, clergy, and tenants of this populous district may ward off the disgrace attached to the slovenly system of public instruction and the education of youth from their own shoulders respectively, it is plain that the blame lies somewhere among them, and certainly very little of it can reasonably be imputed to the tenants. It is the interest of that class, as well as their duty, to have excellent

lent parochial schools : And it must be allowed that even the poorest of them manifest a laudible disposition to procure, by their own endeavours, and at their private expence, for their children, that education which is unhappily withheld from them by the mismanagement of the public establishments of the island. We have ventured these remarks in this place rather than any where else in describing the present situation of the Hebrides ; not because Skye is worse managed than the other isles, (for the same complaints apply to many others,) but because any defects, in public institutions here, are more extensively pernicious than they can be on the less populous isles ; and because this important district, which was once celebrated for its excellent schools, ought to set that example to the adjoining countries which it was wont to do for many generations. The clergy, who are the constitutional watchmen over these schools, ought not to allow any grounds for such complaints ; but, on the contrary, feel pleasure in frequently examining the schools of their parishes, and acting with firmness and energy towards the schoolmasters, encouraging the meritorious and active, and preventing the fatal consequences of opposite dispositions in men to whom so sacred a trust is committed by their country. The gentlemen farmers, who now labour under great and serious inconvenience in maintaining private tutors in their families, ought to assist the clergy in procuring respectable and able schoolmasters, and making their situations comfortable.—And above all, Lord Macdonald and the other proprietors, who are at the expence of supporting the legal establishments

blishment of parochial schools, ought to see that their people enjoy the benefit of it.

All this may appear foreign from the subject of an Agricultural Survey ;—but neither agriculture nor any thing else can thrive among a people debarred the advantages of education, and consequently excluded from participating in the progressive improvements of their fellow-citizens; and it would be unpardonable not to mention, in a description of the present state of the Hebrides, one of the most baneful sources of their poverty and misfortunes, namely, their miserable state in respect of public education.

RAARSAY AND RONAY.

Detm Monroe.—"Twa myle off sea fra the ile of Scalpay forsaid, lyes an ile callit Raarsay, seiven myle lange from the southe to the northe, bot ane myle of sea from Tronterness, and twa myle of breid, with pairt of birken woodis, maney deires, pairt of profitable landes, inhabit and manurit, with twa castles, to wit, the castle of Killmorocht and the castle of Bro-lokit, with twa fair orchards at the sids twa castles, with ane parochie kirke callit Killmolowocke, ane rough country, bot all full of free-staines and gaid quarrellen. It is excellent for fishing, pertaining to M^cGyllychallan of Raarsay be the sword, and to the bishope of the ile by heritage. This same M^cGyllychallan should obey M^cCloyd of the Lewis."

"RONAY,

“RONAY.—At the north end of Raarsay, be half myle of sea frae it, layes ane ile callit Ronay, mair then a myle in lengthe, full of wood and heddir, with ane havin for heiland galeys in the middis of it, and the same havein is guyed for fostering of thieves, ruggairs, and reivairs, till a naill, upon the peilling and spulzeing of poure pepill. This ile pertains to M'Gyllychallan of Raarsay by force, and to the bishope of the iles be heritage.” Such is Dean Monroe's account of Raasay, in which Dr Johnson in 1773 met with a degree of politeness and refinement which astonished him; and where, to this day, the virtues of the people and of their landlord are universally talked of as eminently exemplary. How striking a contrast indeed do Monroe and Johnson, the former two hundred and thirty years before the latter, give of this property! Instead of ruggairs, reivars, and peillers of poure pepill, (*i. e.* robbers, pirates, and oppressors of the unfortunate,) as Monroe characterises them, Dr Johnson, although not much addicted to talking enthusiastically in favour of Scotchmen, uses the following words concerning the people of Raasay. “Our reception exceeded our expectations. We found nothing but civility, elegance, and plenty. The general air of festivity, which predominated in this place, so far remote from all those regions which the mind has been used to contemplate as the mansions of pleasure, struck the imagination with a delightful surprise, analogous to that which is felt at an unexpected emersion from darkness into light. Such a seat of hospitality amidst the winds and waters fills the imagination with a delightful contrariety of images. Without is the rough ocean and the rocky land, the heaving billows and the howling storm:—Within is plenty and elegance, beauty and gaiety,

gaiety, the song and the dance, &c.* Dr Johnson, who seems to have had no idea of the extent of any district from travelling through it, supposes the area of Raasay to be 100 square miles; but we shall be much nearer the truth by assuming little more than the third part of this number; and, taking the length of the island at 16, and its average breadth at 2 miles, consequently its area at 32 square miles, or 16,000 Scotch acres, we shall perhaps be very near its real dimensions. Those of Ronay are about 2,200 acres. Of this extent of 18,200 acres, nearly 3000 are arable. The sea coast of Raasay and Ronay is at least 80 miles following the sea mark. The appearance of both islands is by no means promising, being chiefly composed of rocky hills of no great elevation, and of moorish grounds and peat-mosses. There are, however, remains of woods in various parts of Raasay, but none in Ronay as in Dean Monroe's time; and the beautiful and stately trees near the proprietor's mansion, at Clachan, evince clearly that timber of all sorts will thrive there by proper attention. His garden is well stored with fruit trees, and the new plantations behind it succeed to a wish, even at a very considerable elevation above the level of the sea.

The great body of the island is free-stone. In the northern extremity, and in Ronay, vast quantities of breccia and of granite occur. The old castle, often remarked by sailors and travellers, *Caisteal Bhreòcoil*, stands upon a solid mass of breccia of the firmest con-texture, the stones of which are easier to be broken than-separated. Not far from Raasay-house are found large quantities of the finest porphyry, in pieces which
look

look as if they had been artificially hewn or dressed; and which might be easily turned to good account as mill-stones, and materials for sepulchral and other monuments. They would also serve as ornaments to the corners and steeples of churches and the most exposed parts of public buildings. Lying contiguous to the sea, and in vast quantities of every size, it is surprising that such durable and beautiful stones have not become an article of export. It is this porphyry which Martin mentions in these words: "On the west side, particularly near the village Clachan, the shore abounds with smooth stones of different sizes, variegated all over." Limestone also abounds in Raasay; and there is a calcareous petrifying spring, which has attracted much attention. Mr McLeod the present proprietor has done much to improve the agriculture and live-stock of his property. He cultivates green crops, sown grasses, and the best sorts of barley and oats upon his own farm, and encourages his tenants to follow his example. His stock of black cattle is one of the best in the northern division of the Hebrides, and is annually improving.

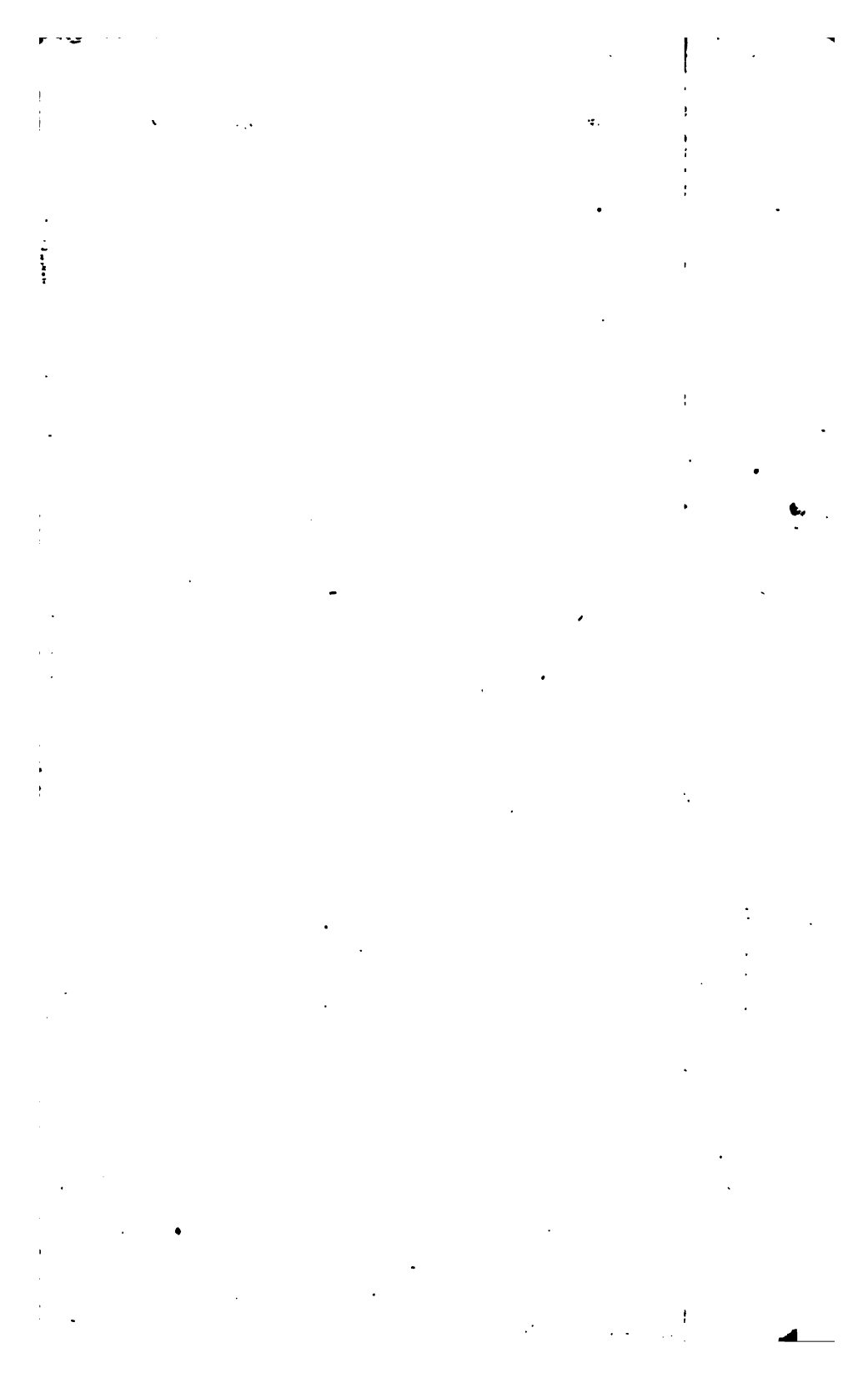
The isles of Raasay and Ronay form a part of the vast parish of Portree in Sky. The population is about 1000, of whom 200 individuals are occasionally engaged in the herring and other fisheries. The natives are good sailors; and every hamlet has a number of boats. The sound of these islands, or the strait which separates them from Skye, has of late years been one of the most favourite herring resorts in the Hebrides. Upwards of 1500 boats, successfully employed, have been seen there at once; and 280 busses, of from 40 to 80 tons each, have got complete cargoes of excellent herrings.

herrings in the space of six weeks. Small boats belonging to Raabay have been known to catch a *last* or 12 barrels in one night ;—which *last* was sold on the spot at 12 guineas. This was a most profitable occupation for five men, who subsisted in the interim upon a little oat-meal and potatoes.

The herring-shoals which frequent this district are usually first seen off the northern extremity of Ronay, just as they enter the large bason formerly mentioned, which is formed by Skye and the opposite mainland of Ross-shire. They are betrayed by the countless thousands of sea-fowls which constantly accompany them, and by the whales which harass them in the rear. The sea seems to boil :—It teems with life and motion ; and the happy natives of the adjacent shores, hail the welcome guests with every demonstration of joy. Every net strong enough to hold a fly, every boat that can swim, is prepared ;—man and boy become sailors—and those people who are so often branded with the epithets of *lazy* and *savagely improvident*, are all at once patterns of vigour and energy, of industry, ingenuity, and courage. How cruel is it at this season to put any obstruction in their way, and how unwise are the salt laws and regulations so often alluded to, which prevent those numerous islanders from availing themselves in their fullest extent of the blessings providentially offered upon *these shores* ! *

The humane and intelligent proprietor of this island does all that lies in his power for the improvement of the people and the advancement of agriculture. He has

* Vide p. 513, 514, &c.



has planted a considerable quantity of trees ; but many thousands of them have been destroyed by the roe-deer, with which Raasay abounds. He must, therefore, extirpate these animals before his plantations can be expected to thrive. Inclosures and draining are much wanted, though in some few places already commenced. Mr McLeod himself has set a good example in both. A school is taught in the island, and attended by 46 scholars ; but three or four additional ones ought to be established in the very extensive parish to which Raasay belongs. Upon the whole, the people are fully as happy and comfortable as any of their neighbours.

88. BARRAY, UISTS, AND BENBICULA.

THIS disjointed region extends from south-west to north-east, about 84 miles in length, and varies in its breadth from 18 miles to one quarter of a mile. Of the solid part, however, the average breadth of land, from Barray-head to the sound of Harris, is five miles. This would give an area of 420 square miles ; but we must deduct the space occupied by the numerous sounds, fords, and arms of the sea, which indent this division of the Long Island in every direction ; and which, amounting to about 120 square miles, leave 300 square miles, or 15,000 Scotch acres for the solid contents of Barray, Uist, and Benbicula. These districts

districts we have joined together, as bearing a considerable similarity to one another in their soil, agriculture, productions, and general management, and as indeed they seem to have once formed but one island.

Dean Monroe describes them as follows, viz. "Bar-ray. Not far from this isle of Wattarsay (one of the islets belonging to Barray,) towards the north be twa myle of sea, lyes the isle Barray, being seven myle in lengthe from the southwest to the northeist and be north, and foure in breadthe from the southeist to the north-west, ane fertill and fruitful ile in cornes, abound-ing in the fishing of keilling, ling, and all uther quhite fish, with ane paroche kirk, namit Killbare. Within the southwest end of this ile ther enters a salt water loche, verey narrow in the entrey, and round and braid within. Into the middis of the said loche ther is ane castle in an ile, upon an strengthey craige, callit Kilelerin, pertaining to Mr Mackneil of Barray. In the north end of this isle of Barray, ther is ane rough heigh know, mayne grasse and greine round about it to the head, on the top of quhilk ther is ane spring and fresh water well. This well truely springs up certaine little round white things, less nor the quantity of confeit corne, lykest to the shape and figure of an little cokill, as it appearit to me. Out of this well runs ther ane little strype downwith to the sea, and quher it enters into the sea ther is ane myle braid of sands, quhilk ebbs ane myle, callit the Trayrmore of Kilbaray, that is the grate sandes of Barray. This ile is all full of grate cokills, and alledgit be the ancient countrymen that the same cokills comes down out of the foresaid hill through the said strype, in the first small forme that we have spoken of, and after ther coming to the sandis

growis

growis grate cokills always. Ther is na fairer and more profitable sands for cokills in all the world. This ile pertains to Macneill of Baray.

" Ywst. (Uists.) Norwast fra thir iles forsaide, lyes the grate ile of Ywst, 34 myle lange from southwest to the northeist, sex myles braid, ane fertile countrey and maine laiche land, full of heigh hills and forests on the eist cost, ore southeist, and all plenisht laiche land in the northwest, with five parochie kirks. Within this south part of Ywst, on the eist cost of the same, hayes ane salt water loche callit Vayhastill. This countrey is bruiked by sundrey captains, to witt, the southwest end of it, callit Bayhastill, be Macneil of Baray, the rest of the ile, named Peiter's parochin, the parochin of Howse, and the mainland of the mid countrey callit Mackermeanache, pertains to Clanronald, halding of the Clandonald. At the end heirof the sea enters, and cuts the country by ebbing and flowing through it: And in the north syde of this there is ane parochin callit Buchagla, pertaining to the said Clandonald. At the north end thereof the sea cuts the countrey againe, and that cutting of the sea is callit Careynesse, and beneith this countrey is called Kenehnache of Ywst, that is in English, the north head of Ywst, whilk term is twa parochie kirkes, and is mair of profit than the rest of haill Ywst, pertaining to Donald Gormesone. In this isle ther are infinite number of freshe water loches; but ther is ane maine loche callit Lochebi, three myle lange, and a arme of the sea has worne the earth that was at the ae end of this loche, and in that narrow entries that the sea has gotten to the loche, the countrey men has bigit up ane thicke dyke of rough staines, and penny stanes, castell lange

lange narrest, notwithstanding the flowing streams of the sea enters throughe the said dyke of staines in the said fresche water loche, and so ther is continually gettin striking amange the roughe stains of the dyke for-said, fluiks, podlochs, skatts, and herrings. Upon this loche ther is gottin a kynd of fishe, the quhantitie and shape of ane salmont, but it has na skaills at all; the under haffe, narrest his vombe is qubyte; and the up-maist haffe, narrest his backe, is als black as jett, with fines like to a salmont. Into this north heid of Ywst ther is sundrie covia and holes in the earth, coverit with heddir above, quhilk fosters maney rebellis in the country of the north heid of Ywst.

Of this description Buchanan makes merely a partial translation; and Martin's account is not not by any means so interesting as might have been expected.

The story of the cockle-embryos being carried down from a spring and along the course of a rivulet near Kilbar in Barray, we found to be merely a fancy of the venerable Dean, perhaps suggested by the patriotic vanity of the natives. The isle of Barray has indeed more cockles than any other island in proportion to its extent, and much benefit is derived from them, not only as food, but also as manure and cement, the shells being often exported to all the neighbouring districts for these purposes. Various other parts of the range of islands under review, likewise contain vast quantities of cockles; and these shell-fish propagate their kind no doubt in the same manner here as in other parts of the world.

It

It seems that Uist had five parish churches in Monroe's time. These have dwindled down to two parishes, and *one parish church* at present.

The population is as follows :

Barray	1969	souls.
South Uist	5500	—
North Uist	4012	—

Total 11,481

The same remarks which have been made respecting public education in Skye, apply with still greater force to this country. Barray and South Uist contain indeed a large proportion of Roman Catholic inhabitants ; but that is no reason why they should not have churches and schools. The Catholic natives are as good citizens, and as much inclined to give their children the advantages of education as the Protestants : but both are at present unhappily excluded. No parochial school is taught southward of Baileloch in North Uist ;—and thus a tract of country 200 square miles in extent, and containing upwards of 7000 souls, has no parochial school !! To complete the evil, the society which formerly maintained a school in Benbicula has withdrawn it ;—at least no school of any description was taught between Barray-head* and North Uist in summer 1808, when the reporter visited that country; and he knows

no

* There was indeed a society school-house building at Barray, and it is likely that it has since been finished,

no part of Scotland which stands more in need of public instruction.

The depredations of the sea and storms upon it are alarming, and indeed incredible to those who have seen nothing similar. It is probable that the country in many places, has lost one-fourth of a mile of its breadth, or 6000 Scotch acres by the sand-drift and encroachments of the sea during the last two centuries.

The surface of the range under consideration may be subdivided according to the above natural delineation, nearly as follows, viz.

	<i>Acres.</i>
Mountains and vallies, one-fifth, or . . .	30,000
Montich (partly arable) Monadh, or Cul-	
cinn,	3-5ths=90,000
Gèaruidh, grass and arable land, . . .	1-10th=15,000
Machir, links, or downs, arable and	
blowing sands,	1-10th=15,000
Total,	150,000

Of this grand total, Barray contains above 16,000 acres; South Uist, Benbicula, and their islets, 74,000; and North Uist with its numerous dependencies 60,000 acres.

A total want of wood and of regular inclosures gives these islands an aspect of gloomy sterility. In winter, and even until the middle of May, the western division, or Machir, is almost a desolate waste of sand; and this sand encroaches rapidly on the next division, namely that of lakes and of firm arable ground. In autumn, however,

however, these sands produce crops of barley, oats, rye, and potatoes, or of natural grass and wild clover, far beyond what a stranger would expect. They then assume a variegated and beautiful dress, scarcely yielding in colours or perfume to any fields in the kingdom; and, being of great extent, they afford a prospect of riches and plenty equalled by no other of the Western Isles. The lakes, with their verdant banks and ruinous forts, surrounded by hamlets, and covered with wild fowls, yield a pleasant picture; but the montich and the mountains remain unchangeable. No tree shelters them,—no leaf of varied hue waves over their gloomy surface:—in sullen sublimity and silence, they remain for ever the same. The early part of life spent in Uist can alone reconcile to its nakedness during winter and spring. The dull uniformity of barren sand or boggy moor is interrupted for six months of the year only by enormous blocks of granite, which are scattered in the most fantastical profusion over this whole district. They are of different kinds; some pure granite, either in detached blocks from the weight of one pound to that of 100 tons, or in ridges of rocks of very irregular strata, which constitute the principal body of the islands. Whinstone and flint are found in some places; but neither limestone, slate, nor freestone, nor any symptom of coals, are to be perceived. In some parts of the hills, vestiges of iron ore (and these by no means doubtful) occur; but, in general, these islands may be considered as destitute of valuable minerals. It must be remarked at the same time, that no regular search has hitherto been made for them by any person competent to the task.

Although the Uists and Barra appear, when viewed from the summits of the mountains, to be half covered with water, yet good spring water is rather scarce. In the eastern division, indeed, and in a few spots of the western, some excellent water is found; but no high-land country enjoys less of the luxury of spring water than this district.

Rivers, in the proper sense of the word, cannot exist in so narrow a space surrounded by the sea; but there are six streams which, in the wet season, carry a considerable quantity of water to the ocean; and at the mouths of which salmon are sometimes caught.

A stranger will be struck by one circumstance in the external appearance of this country, in the same manner as in some of the southern maritime provinces of England; namely, he will perceive that the Atlantic has formed a sort of barrier to itself, by heaping up sand and stones in many places, so as to resemble the work of human industry. The barrier is indeed insufficient, and is gradually retreating from its mighty opponent, but at high spring tides, with westerly storms, it often saves the most valuable part of the country from being inundated and overwhelmed. This holds in a remarkable degree of the southern end of the island of South Uist, from the march of Boisdale to that of Ardmichael in the middle of the district.

The soil, as might be expected from the natural divisions of the country already mentioned, is of very different and even opposite qualities. The sands are dry, and liable to be parched up in summer: The montich and gearruidh, as well as the vallies between the hills, are too wet and cold. No season can therefore
prove

prove favourable or unfavourable to both, excepting a tempestuous one. The soil of the mountains, where any is left to conceal or deform the granite skeleton, if we may call it so, is coarse moss mixed with granite particles, which produce scarcely any thing but stunted heath and the worst kinds of grasses. It is not worth sixpence per acre. But in the vallies between these mountains multitudes of horses and cattle graze during the warmer months of the year. In some few places the grass of the vallies is worth 2s. 6d per acre *per annum*. This is the division in which wood should be attempted to be raised on an extensive scale. Trunks of trees are found in the mosses; and there surely is good reason to suppose, that where wood once grew, it may be made to grow again.

The second division, or montich, consists of deep moss, intersected with rivalets and ditches, and resting upon a bottom of gravel, clay, or granite. From this division the inhabitants are supplied with fuel. The soil is adapted for potatoes, oats, barley, and every species of grasses, when properly cultivated. This is the portion of the island in which agricultural improvements may most successfully be carried on; for it is unmolested by sand-drift, by sea-spray, or by winter-floods, and it is astonishingly fertile in the common productions of the country. It comprehends a large proportion of the whole surface of the island; and if properly improved would quadruple its value.

In travelling along some parts of this division, you now and then find a speck on which shell-sand or lime has been dropt by accident, covered with white daisy or wild clover, and these mixed with the finest grass

imaginable. They yield a striking contrast to the gloomy heath around them.

The soil of this division is infinitely richer, as we observed in another place, than that of the moorland parts of Dorsetshire, Sussex, or Yorkshire. The latter consist of bad till or of chalk, with a thin layer of earth, formed by decayed heath and coarse plants; but the soil of the Uist Montich consists of a deep stratum of moss composed of the remains of the woods which once covered the hills, as well as of the granite particles, and of plants and animals washed down from their sides in the lapse of ages. The few spots that are cultivated, yield abundant returns in favourable seasons; and, if managed with tolerable skill and a due attention to the proper rotations of crops, this part of the island would be highly valuable. The next division, or that which borders on the lakes, and surrounds the habitations of the greater part of the natives; and which, on account of its vicinity to the western shore, where sea-weeds, the ordinary manure used here, are stranded, has been in some measure in a state of cultivation for ages past. It is composed of a layer of thin black mould, of a mossy nature, very fibrous and stiff, and generally resting like the montich upon gravel, till, or granite. This soil is too thin, and its cultivation of course too expensive for being turned to great account. Where the granite blocks can be removed, and the surface water carried off, it is found, however, to yield to few soils in Scotland in point of fertility. Potatoes have been known to return 44 fold, and oats and barley seed from 14 to 22 fold.

This division, as already mentioned, is daily diminishing, in consequence of the encroachments of the sandy soil

soil or machir, which subtends the Atlantic shore. This last is from a quarter of a mile to two miles in breadth from one end of the island to the other, but at an average about half a mile. It is, with some trifling exceptions, a tract of fine sand, naturally fertile, but so completely scourged by incessant crops, excessive pasturing, and every species of bad management, that it requires annual supplies of manure for producing any species of grain. If allowed some years rest, however, it displays the greatest luxuriance and beauty of vegetation. The component parts of the soil are the exuviz of fish and shell-fish, and decomposed granite, whin-stone, and quartz. In this and the last mentioned division very little good water is to be found.

The most superficial view of this island will convince a stranger that the usual subdivisions of lands observed in leases given on the continent of Scotland, as well as in many of the Hebrides, are here impracticable. The sandy division or machir possesses neither fresh water nor grass in winter, but it supplies nine-tenths of the manure used in the parish. The lake and arable division is too bare and unsheltered for cattle, and indeed almost inundated in the rainy season; and would, therefore, if unsupported by the other divisions, be absolutely uninhabitable. The division of the montich, or moss, though naturally the richest and most extensive of the four, is in its present state a desert. But it yields fuel

to the natives, and shelter to their cattle during the most boisterous months of the year. The mountainous division, though apparently useless, shelters the island from easterly and north-easterly winds, the coldest that blow in this region of Scotland;—it forms excellent harbours in the bosom of the mountains; and yields, in the creeks and inlets of the sea which are formed by them, the staple of this country, namely, great quantities of excellent kelp.*

There has been little fluctuation of property for many years past. The proprietors of Boisdale and Bornish reside in the district, and manage their own affairs.

The

* It was once proposed to discuss, at some length, the important question concerning the expediency of prosecuting the kelp manufacture, to the neglect of the real agriculture of this district; and especially to enquire into the effects which the system at present pursued has upon the fisheries and the condition of the great body of the people. The length which this report has already attained, however, prevents us from following out this subject in detail. The kelp manufacture is, in the interim, so profitable to the proprietors, and maintains such a number of the Hebridian population (although not in the most comfortable state) that to stop it is impossible, and to attempt such a measure would be the height of rashness and injustice. Meanwhile there is no doubt that the kelp business proves a most powerful obstacle to agriculture as well as to the fisheries; and that, too, without taking into account the injury (perhaps fanciful and imaginary) commonly believed to be done to the herring fry by the manufacture in question,

The other proprietors visit it occasionally, but do not regularly reside.

There being neither town, borough, nor commerce of any kind, the Uists and Barrat are absolutely destitute of all political influence, further than what a brave and numerous population may be considered to afford. That population is in many respects indeed greatly behind their countrymen, of the improved islands, in agricultural knowledge, and many of the lately received improvements of social life; but they are, in general, an estimable race, distinguished by natural acuteness and energy, as well as by all the moral rectitude which is compatible with uncorrupted manners, without the advantages of education or intercourse with the world. It is scarcely necessary to add, that the higher classes are on a par in all respects with any equal number of their countrymen.

The father and grandfather of the present proprietor of Boisdale, men of enlightened minds and of active and benevolent dispositions, gave great encouragement to their tenants for prosecuting the cod and ling fisheries on their estate; and the families of those whom they settled in small pendicles, on the eastern shore of their property, meet with similar treatment from the present worthy proprietor. These fishermen have accumulated considerable sums by their industry, and set a good example to all their neighbours. The natives of Barrat have for ages been conspicuous for their skill and dexterity in fishing. Mr McNeill proposed to them, about 16 years ago, a measure which has been successfully adopted, and has put an end to the disputes and quarrels formerly frequent among them respecting the fish-

ing grounds. It is perhaps peculiar to Barra, and deserves notice. Every fisherman and his family is summoned to a general meeting once a year, where lots are cast for certain portions of the fishing banks or grounds which lie in the tracts adjacent to Barra, and which are subdivided by means of *land-marks*, well known and familiar to the natives. These portions of the wide ocean are considered as property for that year, by the persons to whose lot they fall, in the same way as if they were meadow or corn land; nor is there an instance of any fisherman attempting to encroach upon his neighbour's fishing station. In order, however, to prevent and to punish any delinquency, an annual admiral is appointed, to whose arbitration all doubts that might arise are submitted;—and the consequences are, that the fishermen of Barra are the most active and prosperous now to be found in the Hebrides. The Uists and Barra possess 450 boats, and nearly 2,200 sailors, occasionally employed as kelp manufacturers, farmers, and fishermen. In this point of view the district is of high importance—for the natives are among the very best seamen in the British empire.

Buildings.—The common buildings in these islands are a disgrace to a civilized country. There are only a dozen houses covered with slates, and even these, with a very few exceptions, are far from being splendid or commodious;—the rest are thatched with straw, as in Skye and most of the Northern Hebrides. The houses of the common tenants and cottagers are the most wretched imaginable. They have neither windows nor chimnies. Instead of windows they have round holes,
 nine

nine or ten inches in diameter, either in the summit or side of the thatch, as it were, to admit the rain and allow some of the smoky atmosphere to escape. The bare earth, or rather mud, forms the floor, and it is often lower than the ground on the outside of the hovel, and consequently covered with water in time of rain. Indeed nothing can be conceived more miserable than these habitations during the winter season, nor can a stranger easily reconcile them with the character of their possessors. The natives are by no means stupid, or patient under annoyance;—yet they dwell in hovels almost as mean as those of Lapland.

Considering the extent of arable land in Barray and the Uists, as well as the fertility of their soil, and the immense supply of sea-weeds and other natural manures afforded by their shores, it is not easy to account for the present wretched state of agriculture and of live-stock in this region. The first appearance of the inhabitants too is not very favourable, and they certainly have not improved in dress and domestic accommodations, of late years, so rapidly as the natives of most of the other Hebrides. A stranger would accordingly exclaim, at first sight, "Here must be some sort of bad management, or some defect at least in turning the natural advantages of the country to account."—Now, two of the proprietors of the district have large estates elsewhere, the tenants of which are as prosperous as any of their neighbours; and they themselves and their ancestors were never known to oppress their people. On the contrary, they have for ages been distinguished, even in the songs of the bards, among the most generous and magnanimous of all Scottish chieftains. Other proprietors

tors of this country reside on their estates, and are well known as the friends of their own tenants, as well as those of their neighbours. The family of Boisdale, for instance, has for many years contributed in numberless ways to the comfort and welfare of all who have surrounded it. The estate of Clanranald has for sixteen years past been under the management of curators, who have laid out in a very judicious manner several thousand pounds in making roads, and upwards of £5000 in planting trees and making inclosures upon their pupil's property in Arisaig and Moideart; and in every respect manifested great attention to his best interests. Mr McNeill of Barray has been an active improver, and a man of sound sense and great benevolence. In short; we can perceive no efficient cause for the present state of this important division of the Hebrides to spring from the landlords, nor indeed any cause excepting the two, to which frequent allusion has already been made; viz. 1. The non-residence of the great proprietors; and, 2. The neglect of agriculture and fishing, in consequence of the great quantities of kelp which the natives are bound to manufacture.

The herring shoals, which formerly visited the lochs of Uist and Barray, have totally abandoned them for 20 years past. Many persons impute this great misfortune to various circumstances connected with the kelp manufacture,—such as, its smoke being offensive to those delicate fish; its various processes of cutting, carrying, &c. being hurtful to the herring fry, or frightening the full grown herrings at spawning time from those haunts where they were formerly allowed to remain unmolested;—and many other causes of the same description.

tion. It is possible that these reasons may be altogether unfounded and absurd; but the fact of the berrings having abandoned the coast, which was anciently perhaps the most frequented by them of all the Hebridian coasts, is certain.

The proprietors must pay attention to the *agriculture* of their estates, before the condition of the people can admit of essential amelioration. Some parts at least of the rents drawn for kelp must be spent in the country, and laid out in improving it in the various ways already recommended, and in ameliorating the breeds of cattle, horses, and other live-stock: otherwise all the efforts of factors and agents will prove nugatory. These gentlemen may raise the rents, and they may even shew a good example of agricultural practice themselves, as Captain Cameron, Lord M'Donald's chamberlain in North Uist, has lately done,* but the people will not follow it. A man occupied along with his family all summer and part of autumn in making kelp, can never manage land to good purpose: he must neglect the one or the other—and in Uist the land is almost completely neglected.

As a proof, however, of what *may be done here*, we give Captain Cameron's mode of improving ten acres of peat-moss land at Lochmaddy in North Uist. He writes so distinctly and perspicuously that we use his own words:

“ *Lochmaddy,*

* Vide p. 374.

"Lochmaddy, 24th Aug. 1808.

SIR—I inclose herewith answers to your queries transmitted to me on the 5th last; and as you seem desirous of my stating matters of personal experience in the improvement of my own farm, I shall do so with great readiness, as it may add another proof to the many already adduced, of the possibility of cultivating moss, as well for pleasure as for advantage and profit.

"Having been in Lochmaddy, you know the land there is altogether moss,—so much so, that in 1804, when the house which I now live in was begun to be built, to clear away the foundation I had peats cut in the usual way to the depth of four feet: I then set about making a road broad enough to drive a cart on, draining the ground contiguous to the house, and paring and burning the most boggy and dry parts, which altogether had a most unpromising appearance. The following winter I began to prepare about three acres of it for potatoes by levelling the moss, filling up the hollows, and forming the whole into ridges of six feet broad, with a furrow of two feet broad between each range, taking care that the ridges were so formed that each furrow became a separate drain, from which the moss is cut and thrown out with a spade upon the ridges, which are previously spread with a thin covering of dung or sea-ware. This operation is performed as early in winter as possible, so that the wet moss thrown out may get as much as possible of the winter frost, which has the effect of reducing it to a mould or soil; but if the same operation is performed in summer, the moss thrown from the furrows would immediately get into a hard peat, and the whole labour would be lost. The
potatoes

potatoes are afterwards planted with a dibble in April, and the produce generally nine or 10 returns. The next winter I had the ground, in which the potatoes were, well trenched and turned over with the spade, and the clods and lumps broken, forming every three ridges into one, the ridges being now 22 feet broad with a furrow between each. In March following, (1806) I had the whole covered with a top dressing of compost, made the summer before of sea sleech, or mud, dung, drifted sea-weeds, and rubbish of lime; and the beginning of April oats sown, which were an excellent crop. The following year (1807) it was my intention to have it prepared for turnips; but being immediately in front of the house, and desirous of having it turned into grass as soon as possible, I had it again dug with the spade, and oats sown with grass seeds, red and white clover, and rye-grass.—The oats a good crop, though not quite so long and rank in the straw as the former year. In winter following I had the whole of the three acres covered with shell sand, about 10 ton to the acre; and this year, in June 1808, I had 400 stone of excellent hay, and would have had a third more had not the oats the year before been sown too thick for grass seeds. It is now the 24th of August, and there is a second crop nearly equal to the first, which it was my intention to have pastured, but I am afraid of having the ground poached, as I do not think it yet fit to bear cattle:—I have, therefore, preferred the imputation of bad farming, and determined to cut it, which is now begun; and although, in general, shorter than the first crop, yet I think it thicker; it has also more of the red clover, which is in many parts above two feet high, and most luxuriant.

"I had besides the first year, in 1804, tried about an acre of the most ratty and baggy part of the moss, by first levelling and trenching it with the spade, and had it afterwards covered with a top-dressing of sea-sleech and rubbish of lime, and oats sown, which were but a middling crop. The next year I had potatoes planted in the usual manner—a good crop; and the following year prepared it for turnips, by first digging the ground in winter and again in summer, with compost and seaweed as manure; and, about the middle of June, turnips sown, which were as good a crop as I ever saw—many of the turnips 11 and 12 lbs. This year the ground was sown (5th April) with potatoe-oats and grass seeds; the former an excellent crop; and will, I am convinced, produce from 10 to 12 bolls an acre.

"Having thus detailed the mode of culture and cropping adopted in the first four acres of moss, I think it unnecessary to add any thing farther, than just to mention that I have, besides the above, six acres more under the same rotation, (the whole in one field,) only, for the second crop of oats have substituted turnips, and thereafter oats and grass seeds, which I think a better rotation, and better calculated for reducing the moss into a mould previous to throwing it into grass. This first year, potatoes; second, oats; third year, turnips; fourth year, oats with grass seeds; and fifth year, grass.

"I shall now give you an account of the different kinds of crops this year upon the above 10 acres, with the *average value* of each; so that, when compared with the expence, it may be known whether it is an object to pay any attention or not to the reclaiming this kind of land, so prevalent in every part of the Long Island.

Three

"Three acres hay, 1st crop, 400 stones of 24 lbs.		
at 9d.	.	L.15 0
Do. do. 2d crop, 200 do. supposed	7 10	
	—————	L.22 10
Two acres drilled turnips	.	15 0
Three acres oats (potatoe and early		
red, one half of which laid down		
with grass seeds) 18 bolls, valued		
with the straw at 21s. per boll,	.	18 18
Two acres potatoes, 250 barrels of		
5 pecks, at 2s. per barrel,	.	25 0
		<u>L.81 8</u>

"The only part of the annexed that may be thought high-rated is the hay; but you will allow the charge is fair, when I inform you, that for three years previous I have been obliged to import hay from Ireland and from Skye, which just cost me at that rate per stone of 24 lbs. exclusive of freight.—Now for the expence of making the above crops,

Compost for 2 acres oats	.	L.5 0
Two bolls red oats, from Thurso in Caith-		
ness, for seed, 25s.	.	2 10
One boll potatoe, ditto from do.	.	1 8
Twelve barrels potatoe, for seed at 2s.	L.1 4	
Thirteen barrels do.	8s. 5 4	
	—————	L.6 8

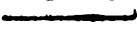
Labour performed in preparing 2 acres		
potatoes, 3 acres oats, and 2 of tur-		
nips, in which is included harvesting		
the crop, and every expence,		
	.	44 0
		<u>L.59 6</u>
		" By

"By the above you will observe I gain L.22. 2s. notwithstanding the high price paid for seed oats, and a part of the seed potatoes. The expence of the whole to the present day has cost about L 200, in which is included nearly half a mile of road, which cost about L.50 ; and which, having first made, facilitated every other improvement afterwards, as well as added greatly to my comfort. In ten years hence I reckon I shall be repaid every expence ; from which it is deducible that a tenant, upon a lease of 15 years, can reclaim moss in the Long Island, and pay himself and a crofter, or person that works with his own hands, in ten years or less, and bring the worst moss, without even the aid of lime, into a state of culture, fit to produce excellent crops of potatoes, oats, and hay. What a field does this open for the tenants of Uist ! I am, &c. yours,"

To Mr J. M'Donald. (Signed) "ALLAN CAMERON."

The very intelligent gentleman who gave this account of moss improvement, and who is perfectly well acquainted with the island in which he resides, and is perhaps the best portion of the Long Island, is of opinion that the kelp manufacture has not produced any unfavourable effect upon the Uist coasts with respect to the herring-shoals, which he thinks have their stated periods of frequenting and abandoning certain shores, totally independant of what man can do. He admitted the difficulty of rendering the kelp manufacture compatible with the agricultural improvement and prosperity of the Long Island, and the obstacles which offer themselves to the separation of the different employments connected with both these branches of industry.

dustry. Nor indeed is it at all possible wholly to reconcile them. The tenants are obliged to keep more horses than they would otherwise need, and these too of a small breed, almost good for nothing else, for the purpose of carrying the sea-weed from the shores to the place of burning it into kelp, and the various other employments requisite in the course of that laborious manufacture: By this means, their grass is wasted, their breed of horses prevented from being raised to a proper size for the improved husbandry, and their whole live-stock is seriously injured in quantity and quality. They are liable to great expence in buying horses, and in feeding such as they themselves rear for the kelp manufacture; and as a considerable quantity of kelp is made on the west shores of the district, corn, hay, and grass of every sort are frequently sacrificed to this manufacture.

Kelp is well known to be made of sea weed either biennially or triennially cut with sickles from the rocks, or cast up by the sea and drifted upon the shore. It is dried in the sun just enough to admit of burning, and then gradually burnt into ashes in kilns of quadrangular form, from 10 to 18 feet long, and about two feet four inches broad, and the sides and ends two feet high. When a sufficient quantity in proportion to the size of the kiln has been burnt and reduced to ashes, the manufacturers stir about the burning embers briskly with wooden poles pointed with iron to the length of three feet, the poles themselves being altogether nine or ten feet long, and of this shape  the crook being the extremity of the iron end, and pretty thick, for the purpose of stirring the ashes with effect. In a few mi-

minutes the ashes become partly liquid and partly retain their former appearance, but the kelpers, with their poles, work the whole mass and mix it until all become a liquid, or at least is reduced to the consistence of moist clay. The heat during this operation is intense, and so is the labour of the workmen. When at last reduced to the consistence desired, the mass is allowed to cool, and covered up with sea weeds and clods to prevent rain from having access to it. It takes many hours to cool. When cold it resembles coarse lava in consistence and weight, and is of a greyish or leaden colour. Its weight is nearly equal to that of ordinary freestone, or lapis ollaris, which it resembles more than any other British stone. It is supposed that 18 tons of weeds make one ton of kelp; but the proportion depends so much upon the dryness of the weeds, that nothing can be accurately ascertained about the proportion. If very wet when burnt, the ton may require 20 tons of weeds; if very dry only nine or ten. After the first burning in a kiln, or what the people of the Long Islands call *únlar* (*i. e.* floor of kelp,) they sometimes add one or even two more *únlar*s to the heap, considering it easier to work into a liquid state the ashes deposited upon kelp, than those which are burned upon the ground, or upon a brass or cast-iron flooring or bottom, and also saving themselves the trouble of building a new kiln. The kilns are usually built of loose stones without any cement excepting a few earthen clods. Some dross from their walls always sticks to the kelp, and greatly diminishes the beauty of its external appearance. The factors and ground officers of the different proprietors, indeed, use every effort to prevent any impurities from

from being mixed with the kelp; but the tenants are sometimes careless about it. The kelp is then carried in boats to the vessels which import it to the different markets of the kingdom. The makers allow 21 cwts. to the ton, as an indemnification for the dross and impurities above mentioned. They keep an account of the quantity shipped by each individual; and are afterwards paid for every ton at the rate of from L.1. 10s. to L. 3. 3s. according to the circumstances of the shores, and the difficulties attending the manufacture. In some few places they receive even L.4. 4s. per ton. Most of the tenants pay their rents by their labour at kelp during the summer months; and have their lands in fact gratis, or as wages for their toils. The quantity manufactured in Barray and the Uists, for some years past, has fluctuated between 3,000 and 3,700 tons; and it has unquestionably enriched the proprietors, and some of the principal tacksmen, far beyond what the labour of the inhabitants in agriculture could have done in the same period of time. Should the price, however, fall below L.8 or L.9 per ton, it is doubtful whether these proprietors would not find their account in directing the industry of their tenants exclusively towards the improvement of the land.

The agriculture of Barray and the Uists deserves no particular notice. A few individuals, indeed, strive here and there to improve it, such as Major Macdonald at Askernish in South Uist, Mr Maclean of Boreray, Mr Macdonald of Bannalad, and Captain Cameron of Lochmaddy in North Uist, &c. but they have many difficulties to encounter; and it will be long be-

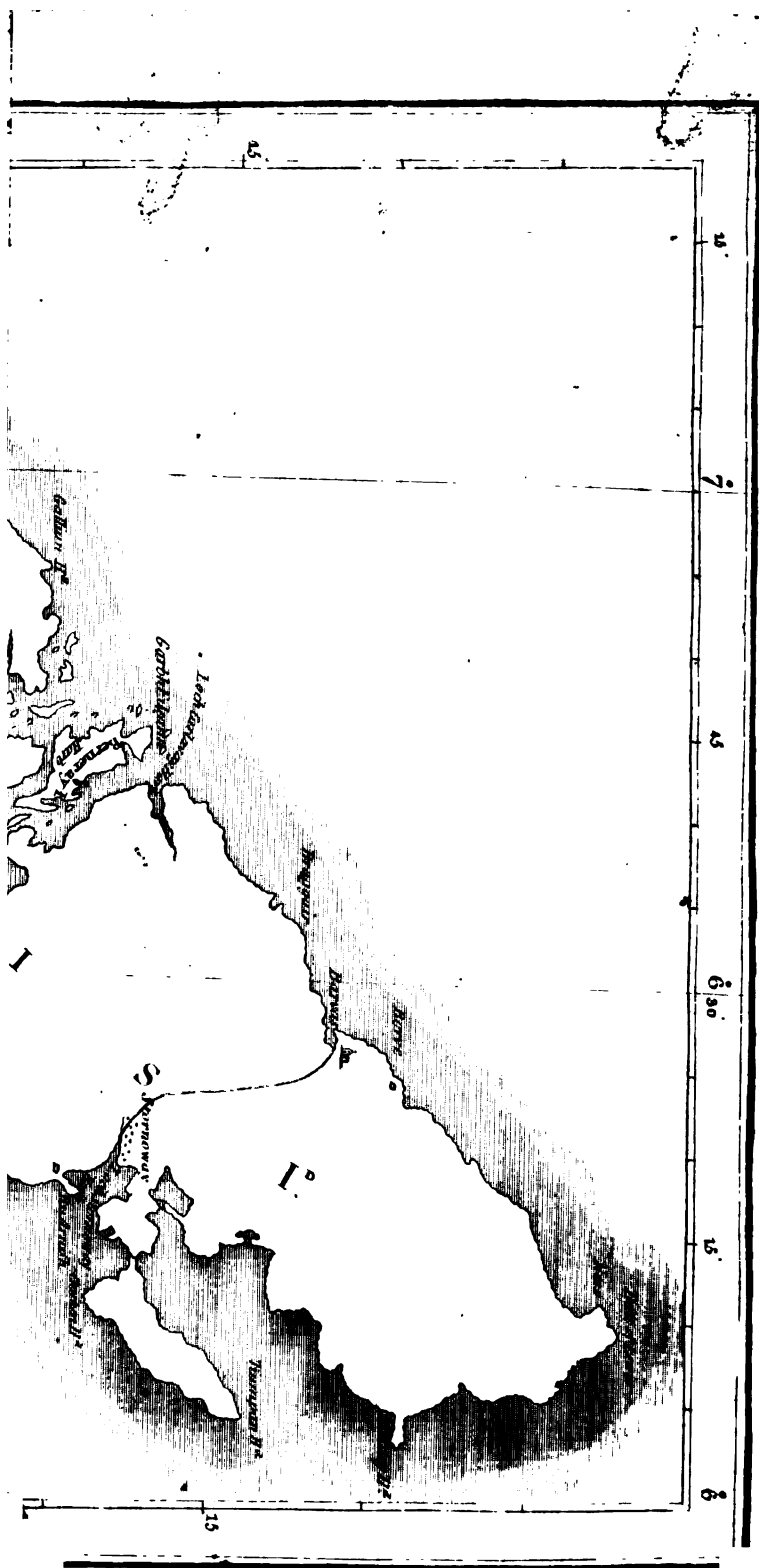
fore this fertile tract can be compared with even the worst parts of Islay and the improved Hebrides.

The breeds of horses and black cattle are not bad, but mismanagement and overstocking, as well as the want of winter food and housing, ruins them. The average price of cows has for 10 years past been from L.3 to L.4. 15s. a head; a miserable price for cattle nearly as large as those of Skye and Mull!!

The number of horses in Barray and the Uists, is not under 5000, and that of black cattle rather exceeds 9000 head. Of the former about 800 annually perish from age, fatigue, or bad usage. Of the latter 900 or 950 are exported, and perhaps as many die of distempers in the district.

The great desiderata in this extensive tract are roads, inclosures, subdivision or particular allotment of lands, and leases to the small tenants. Without these no agricultural prosperity can be looked for. There ought to be regular packet boats from Lochmaddy to Skye as at present; from Loch-Boisdale to Arisaig; and from the sound of Barray to Tobbermorey in Mull. Roads should be made from all the harbours on the eastern coast to the inhabited districts on the western, and the fords from South Uist to Benbecula and North Uist ought to be marked by proper sign posts; and boats should be stationed near them for the accommodation of passengers at all times of the tides. This should be particularly the case at the passage from Ardmhachir to Sithean in Benbecula, and from Balvanich in the latter to Carinish or Jochcamish, the nearest point in North Uist by the strait of Corran.

III.



In concluding our remarks upon this interesting district, it must be observed, that although Barray and the Uists, being kelp estates, must have a large proportion of small tenants upon them, and indeed a greater than is necessary for the common run of the Hebrides, yet the proprietors will do well to accommodate a certain number of gentlemen tacksmen, or great farmers upon their estates. Without this the country must go *backward* in the real sense of the word, good order will be endangered, and the legal establishments and public duties of the district will fail of producing their natural beneficent effects.

24. HARRIS AND LEWIS.

THESE form one large island ; the most extensive of all the Hebrides, and hitherto the most neglected upon the whole. It is 82 miles long from the sound of Bernera to the Butt of the Lewis, running south-west and north-east ; and although not so winged or indented by arms of the sea as Skye, yet sufficiently so to furnish some of the best harbours in Great Britain. The average breadth is 11 miles, and the square area accordingly 902 miles or 451,000 Scots acres. Of this great extent only 26,000 acres are now used as regular meadow or corn land ; the rest consists of mountains,

moors, marshes, and other wastes. The circumference following the sea mark is 850 miles. The valued rent is £.7783. 6s. 8d. Scots, and the real actual rent, (kelp valued at £.10 per ton,) amounts to about £.10,000 Sterling per annum.

Dean Monroe. ' HARREY. NOW we returne backwards to the Harrey, quhilk is bot ane ile and the Lewis togidder, extending in lenthe from the south-west to the north-eist to three scoir of myles, and from the north-west to the south-eist to 16 myle in breid. Within the south pairt of this ile lyes ane monastery with ane steipell, quhilk was foundit and biggit by M'Cloyd of Harrey, callit Roodill. This south pairt of the countrey callit Harrey is verey fertill and fruitfull for corne, store, and fisching, twisse mair of delving in it nor of teilling. Within this end of the countrey ther is ane water, with an guid tak of salmont fisching in it, with ane heighe greine hill callit Copesaall, maist excellent for scheipe in the pairts quheron ther wes sheipe, quen I wes ther without auners and verey auld. In this countrey of Harrey, northwart, betwixt it and the Lewis, are maney forrests, quherin are abundance of deir, bot not great quantitie, verey faire hunting games without aney woodes, with infinite slaughter of otters and macttickes. This isle has neather wolves, taides, nor edders in it.

Lewis is the north pairt of this ile, and the maist also, faire and well inhabite at the coste, ane fertile fruitfull countrey, for the most pairt all beire, with four paroche kirkes, and with an castell callit Stoernaway; with three principal salt water loches, verey gude for take of herrings, to wit, Loch Selga, farrest to the south.

south-west, Loch Fasirt, northwart frae that ane loche that is lange and has certaine small loches in it, quhilke is for that same cause callit the loches. By these ther is uther three loches, not weil qulylomes for take of herrings, to wit, Loch Steornaway, with infinite fresche water loches in this Lewis. Ther are eight waters for take of salmont. In this ile ther are maney scheipe, for it is very guid for the same, for they lay forth over one mures and glenis, and enter never in a house, and ther wool is bot anes in the ziere plukit aff them in some fauldies. In this countrey is peit moss land at the sea coste, and the place quhar he winnes his peits this ziere, ther he sawis his corne the next ziere, after that he guidds it weil with sea ware. A grate take of whaillies is oftines in this country, so that be relatione of the maist ancient in this country, ther comes 26 or 27 quhailles young and ald to the teynd anes ther. Ther is ane cove in this countrey, quherin the sea fallis, and is twa faddom deepe at the ebb sea, and four faddom and mair at the full sea. Within this cove ther usis whyttenis to be slain with huikes, verey many haddocks, and men with their wands sitting upon the craiges of that cove, and lades and women also."

Such is Dean Monroe's account of this large island; and such pretty nearly is its present situation. In no respect has it improved, excepting in consequence of the building of Stornaway village, and the introduction of potatoes. The kelp manufacture is indeed prosecuted with great ardour of late years, and, in some few instances, the tenants have had their lands portioned out separately, and subdivided by the present managers; but taking the district over-head, it is incomparably the

most backward in agriculture and in the general state of the inhabitants of all the western isles. Lewis was visited by Martin, who gives a particular description of its very curious remains of antiquities, and of many of its natural productions: Buchanan, as usual, gives merely a translation of Dean Monroe's account. The great body of this island is uninhabited. It is only along the sea shore and within half a mile of the coast that the few straggling hamlets and hovels of the natives are met with; so that scarcely an inhabited dwelling occurs in the whole extent of it 1000 yards from salt water. The general aspect, like that of the Uists and Barra, is gloomy and bleak; but in some places, and especially near the town of Stornoway, the beach is beautiful and verdant. The greater part of the soil is moss upon clay and gravel. There is no wood of any kind excepting a few bushes near Stornoway, and trunks of trees found in the mosses, as in many other now woodless Hebrides. The beach is sometimes bold and rocky, and here and there sandy and arable; but the rocky quality greatly predominates. Various inlets of the sea penetrate from five to twenty miles into the country, and form capacious and excellent harbours on both sides of the island, as well as good kelp shores. Vast quantities of sea weeds are drifted upon the sheltered parts of the coast, and constitute four-fifths of the manure used by the natives. The remainder they procure by a species of domestic economy which is too disgusting to admit of a particular description. The crops raised are oats, barley, flax, and potatoes. No hemp occurred in 1808, although Martin mentions that some was cultivated here in his time. The manufacture of
coarse

coarse pottery from the red clay, common over many parts of Lewis, is still carried on, and might be improved so as to afford a valuable article of export. It proves the natives to be endowed with an ingenious and mechanical turn.

Although Lewis be the most northerly of the large Hebrides, yet such is the sharpness of the soil, and the heat of the summer months, that harvest usually commences as early there as in any of the Hebrides to the northward of Collonsay and Icolmkill. It is not uncommon to cut barley the first week of August, and within 9 weeks of the time of sowing the seed. This barley is by some thought to be an earlier species than the common sorts in the other Isles, but there is no reason for believing that any other difference exists, than merely the circumstances of the soil being sharper in Lewis, and also of the people giving more manure to their land.

In spite of distillation and mismanagement, this island raises grain enough for its own consumption. A considerable quantity of black oats is distilled into whiskey (a thing uncommon elsewhere,) and the inhabitants of the different hamlets, who possess the lands in common, frequently join or club together for paying the fines leviable by the excise as the penalty of illicit distillation. A justice of peace court was held at Stornoway in July 1808, for the purpose of inquiring into the delinquencies of ~~this~~ description committed in the district; and a considerable number of the natives, perhaps the most uncouth ~~figures~~ to be seen in Britain, appeared at it. They pleaded their cause with great ingenuity; but the matter generally ended in their paying pretty smart fines, and going to their

their homes grumbling and discontented. The fines, however, were divisible in consequence of private compacts by themselves, among many families, and smuggling and distillation goes on as usual. Many of those poor people were obliged to travel from 50 to 60 miles on foot through mountains, rocks, and morasses, in order to attend the summonses delivered to them for appearing at this court in Stornaway, and thus to lose four or five days work, and travel from 100 to 120 miles, through a wild uninhabited country, while the matter for which they were so cruelly punished, turned upon a mere trifle, or perhaps upon false information. It is also unpleasant to reflect, that the temptations to perjury, both respecting the use of salt, and the distillation from grain, are among these miserable and sequestered regions, almost insuperable.

The population of Lewis and Harris is 13,942, which occupying 451,000 acres, gives 32½ acres to each individual! How different from that of Icolmkill, which affords each native only three acres!

Stornoway, the first town in the northern Hebrides, and the only one in Lewis, stands at the head of a fine arm of sea and excellent harbour of the same name. It has gradually increased from a paltry hamlet of a dozen thatched hovels, to the size and importance of a considerable town, containing, in July 1808, a population of 2305 of the following description, viz.

Married

Married men or widowers.....	475
Married women or widows	537
Male children	499
Female children.....	509
Male servants and apprentices	59
Female servants.....	166
Absent mariners.....	60

Total.....2305

There were 44 registered vessels of from 16 to 127 tons burden belonging to the port and district, which were navigated by 156 men and boys, and of which the tonnage amounted to 1612 tons. Besides these vessels regularly employed in fishing and trade, there were 104 small boats navigated by 562 men, and occasionally engaged in the herring, ling, and cod fishing. These did not indeed belong all to Stornoway, but many of them had their residence there for part of the year, and contributed to enrich the place.

During the five years ending July 1808, there had been 17,430 barrels of cured herrings, and 719 tons of ling and cod fish exported from Stornoway, which, at the most moderate calculation, had brought L.52,300 Sterling into the town. The quantity of oil exported could not be precisely ascertained, but it was supposed to amount to L.10,000 in value.

It was gratifying to find a thriving town in this remote island, in possession of a brisk trade and fishery, and its principal merchants connected by regular correspondence and commercial intercourse with all parts of Britain and Ireland. There are two excellent schools
regularly

regularly taught in the town ; these were attended in 1808 by 219 scholars of either sex, who owe much to the kind and laudible inspection of the Rev. Mr Mac-kenzie, the minister of the parish. This gentleman, while accounting for the want of education throughout the other parishes of the island, did ample justice to the benevolence and humanity of the noble proprietor, Lord Seaforth, and of his amiable lady, who contribute handsomely to the support of the public education of boys and girls upon their vast estate. But notwithstanding all their efforts, and the exertions of some spirited clergymen and individuals who co-operate with them, such is the degraded state of the great mass of the population, that they will not put their children to school, or afford them the means of ever bettering their present hapless condition. When reproached on this head they answer, "*If we give them education, they will leave us.*"

The town of Stornoway, with its neat slated houses, straight streets, and public spirited, independent, and active population, yields a striking contrast to the rest of the island. Dwelling-houses, dress, food, and general accommodation, are the most wretched imaginable throughout the whole range of the country district. So vile indeed are the dwellings in general, that we cannot enter upon a description of them.—Suffice it to observe, that the houses are cleaned out only *once a year*, for the purpose of manuring the land with what polluted contents the most Hottentot economy had collected in them during the whole season. Women undergo fatigues in the labour of agriculture totally incompatible with their sex :—They are seen bare-footed and bare-legged,

legged, carrying manure and peats in creels upon their backs, and even dragging harrows over ploughed ground; which harrows are fastened by hair ropes round their necks and shoulders. In short, it would be disgusting to mention in detail the domestic and agricultural barbarism of those poor people, who seem to have made no advances in civilization or comfort since the reign of Queen Mary.

The breeds of horses and cattle are the same as in the southern part of the Long Island. Of late some attention has been shown to mending the breeds of both; and Mr Mackinnon of Cprry, and some other gentlemen* in company with him, have introduced sheep-farming, and stocked a considerable tract of ground with Tweeddale or black-faced sheep. They have also begun to rear better cattle in Lewis than was ever done before, taking care not to over-stock their lands, and to manage their grass with judgment and economy.

To mention the means of improving Lewis and Harris, would only be to repeat what has been already written concerning Skye and the southern division of the Long Island. This extensive tract can never be improved until roads are opened from Stornoway and the harbours on the east side to the different hamlets on the western shore, where the great mass of the population resides. Only 12 miles of road have as yet been made in all the island: Nor was there in July 1808 any appearance of prosecuting that first and preliminary improvement.

Lands

* Vide p. 467.

Lands are subdivided not only as in Uist into pennies, half-pennies, and farthings, (the last of which ought not on any account to be allowed, being too small a farm for the maintenance of a family) but also further, into what are called *clitigs*, *cianags*, &c. or half farthings, and the half of half farthings. No smaller subdivision of lands than half-penny lands ought to be permitted; and of these, leases ought to be given for a reasonable number of years; the tenants being bound to perform certain improvements of inclosing and draining, &c. to be paid for by the proprietor in case of removal at the expiry of the lease; and also to leave their lands to the eldest son, or to some *one* heir, and not the whole of the family, in the event of their dying during the currency of such lease.

The *caschrom*, or crooked spade, described in page 151, is the principal implement of agriculture used here: and it certainly answers the purposes of aration extremely well for this soil and surface. But great abuses prevail in heaping up the best soils in high narrow ridges, and leaving broad spaces intervening; either of bare stones or of wet ditches; instead of leveling the ground, and removing both the stones and redundant waters, by the obvious means suggested by the nature of the ground, and by an enlarged view of the best interests of the farmers themselves. Next in importance to the proper subdivision of lands, and the granting of leases upon liberal and humane principles, is the appropriation of the moor lands to the different farms, and the division of them by competent march dykes by the proprietor. This operation is indeed a serious one in so extensive and barren a region, but it is

a matter of primary consequence towards the improvement of the island :—At present the whole of it, excepting a few spots near the different hamlets, is one vast common :—Of course, good pasturage, and judicious management of cattle, are entirely out of the question.

The rents of this country may indeed be nominally raised, for the miserable inhabitants have no resource but the lands, at whatever price these may be allotted to them ; but the humane proprietors will surely take care to proportion these rents to the means enjoyed by the people for paying them. This has not always been the case ; although, at the same time, it must be acknowledged, that the proprietors alluded to are entirely incapable of wilful oppression. They are not much acquainted with the country or the state of its inhabitants ; and accordingly imagine, that nothing inconsistent with their own principles and the interests of their tenants will be suggested by those to whose councils they listen with regard to the management of this remote island. Facts, however, are conclusive evidence. The people of Lewis, and many of those of Harris, are, upon the whole, the most miserable and degraded in this part of the British empire.

25.—ST. KILDA, OR HIRT.

Dean Monroe.—‘ HIRTA.—To the west northwest of this ile forsaid, out in the maine ocean seas, be three-score

score of myle of sea, layes ane ile callit Hirta, ane maine laiche ile, so far as is manurit of it, abundant in corne and grassings, namelie for sheipe, for ther are fairer and greiter sheipe ther, and larger tailed then ther is in any uther ile about. The inhabitants therof ar simple poor peepil, scarce learnit in aney religion, bot M'Cloyd of Herry, his stewart, or he quhom he deputs in sic office, sailes anes in the zeir ther at mid summer, with some chaplaine to baptize bairns ther; and if they want a chaplaine, they baptize ther bairnes themselves. The said Stewart, as he himself tauld me, uses to take ane maske of malt ther with a masking fatt, and makes his malt, and ere the fatt be ready, the compons of the toun, baith men, weemen, and bairnes, puts their hands in the fatt, and findis it sweet, and eats the greyns after the sweetnes thereof, quhilk they leave nather wirt or draffe unsuppit out ther, quharwith baith men, weemen, and bairnes, were deid drunken, so as that they could not stand upon their feet. The said stewart receives their dewties in meill and reistit mutton, wyld foullis reistit, and selchis. This ile is maire nor ane myle lange, and narrest als meikle in braid, quhilk is not seine of aney shore, bot at the shore syde of it layes three grate hills quhilk are ane pairt of Hirta, quhilk are seen affar offe from the fore landis. In this faire ile is faire sheepe, falcon nests and wyld foullis biggand, bot the streams of the sea are starke, and are verey evil entring in aney of the saids iles. This ile of Hirta pertains of auld to M'Cloyd of Herry." Martin gives a long account of St. Kilda, which was much more populous in his time than it is at present. He found 200 souls upon it in 1692; the re-
porter

porter in 1795 found only 87, Mr Campbell of Skipness about ten years ago 120 ; and last summer (1809) they amounted to 103. Buchanan gives a literal translation of part of Dean Monroe's description.

This remote island lies 48 miles westward and by north of North Uist, which is the nearest to it of the Hebrides, and about 140 miles from the mainland of Scotland. It is three miles long and two and a half broad, and together with its wild and precipitous dependencies, or adjoining islets, comprehends nearly 3000 acres of superficial extent. The soil is mossy but abundantly fertile ; and the general aspect of the island is by no means so bleak and sterile in summer as its exposed situation would lead us to expect. Barley, oats, and potatoes thrive tolerably well, especially the first and last mentioned ; for oats are frequently shaken and blighted by the storms.

Of quadrupeds there are only four species, horses, cows, sheep, and dogs. No essential difference can be traced between the breeds of these which have been reared here for ages, and those of the Long Island, from whence they were probably first imported. Nor, indeed, can we now find much of those characteristic differences of any kind described by Martin and Macaulay, as well as by the Committee of the General Assembly in 1709, which formerly rendered this small island a curiosity to the inquisitive traveller.

Colonel Macleod, the present proprietor, bought it a few years ago from the heir of the ancient family named by Dean Monroe, and proves, in every sense of the word, a blessing to the inhabitants. They are no longer fleeced to the skin, or oppressed to down-

right beggary and starvation as formerly, but encouraged to industry, and amply rewarded for their labours by a humane and enlightened master.

A project has now been entered into of enabling the natives to have regular communication at the proper seasons of the year with the Long Island and the rest of their country. They have received two stout boats as a present from the proprietor. A young man of knowledge and enterprise from Edinburgh has taken a part of the lands in lease, and bound himself to build a good house, and to improve the island in various ways, especially by teaching the inhabitants the best mode of turning to account the staple production of the place, which is wild fowls and their feathers or down. Of these, large quantities were always exported, but not one-tenth of what might have been secured by the natives. They will now prosecute their labours with additional perseverance and success, having abundance of the requisite tools and the advantage of a ready market.

The inhabitants of this remote island live precisely as Martin described them a century ago; but they have much more knowledge of the world, and consequently less of their primeval simplicity and perhaps innocence of manners. "They live (says Martin) contentedly together in a little village on the south-east side, St Kilda, which they commonly call *the country*; and the Isle Boreray, which is little more than two leagues distant from them, they call the *northern country*. The distance between their houses is by them called the High Street: Their houses are low built of stone, and a cement of dry earth; they have couples and ribs
of

of wood covered with thin earthen turff, thatched over these with straw, and the roof secured on each side with double ropes of straw or heath, poised at the end with many stones: Their beds are commonly made in the walls of their houses; and they lie on straw, but never on feathers or down, though they have them in greater plenty than all the Western Isles besides. The reason for making their bed-room in the walls of their houses, is to make room for their cows, which they take in during the winter and spring.

“ They are very exact in their properties; and divide both the fishing as well as fowling rocks with as great niceness as they do their corn and grass; one will not allow his neighbour to sit and fish on his seat, for, this being a part of his possession, he will take care that no encroachment be made upon the least part of it: and this, with a particular regard to their successors, that they may lose no privilege depending upon any parcel of their farm. They have but one boat in the isle; and every man hath a share in it proportionably to the acres of ground for which they pay rent. They are stout rowers, and will tug at the oar for a long time without any intromission. When they sail, they use no compass, but take their measures from the sun, moon, or stars; and they rely much on the course of the various flocks of sea-fowl; and this last is their surest directory. When they go to the lesser isles and rocks to bring home sheep, or any other *purchase*, they carry an iron pot with them, and each family furnishes one by turns; and the owner, on such occasions, has a small tax paid him by all the families in the isle, which is by them called the *potpenny*.

“These poor people do sometimes fall down, as they climb the rocks for fowls and eggs, and perish: Their wives, on such occasions, make doleful songs, which they call lamentations. The chief topicks are their courage, their dexterity in climbing, and their great affection which they shewed to their wives and children.”

Sea fowls.—In this respect nature has been as bountiful to St Kilda as to any spot on the globe. The countless millions which perpetually swarm around the principal island and the smaller adjacent isles, literally darken the air.

“The northern ocean in vast whirls
Boils round the naked melancholy isles
Of farthest *Kilda*, and the Atlantic surge
Pours in among the stormy *Hebrides*:
Who can recount what transmigrations there
Are annual made? What nations come and go?
And how the living clouds on clouds arise?
Infinite wings! till all the plume-dark air,
And rude resounding shore are one wild cry.
Here the plain harmless native to the rocks,
Dire-cting, gathers his ovarious food;
Or sweeps the fishy shore, or treasures up
The plumage, rising full, to form the bed
Of luxury. And here a-while the Muse,
High hovering over the broad cerulean scene,
Sees *Calçdonia* in romantic view.”

Thomson.

1. Bunnabhuachaille, or great awk, is the largest bird met with in the neighbourhood of St Kilda. It is larger than the common goose, of a black colour, the *irides* red, having a long white spot under each eye: The bill is long and broad at the base. It cannot fly by reason of the shortness of its wings; lays only one egg; and, if robbed of it, lays no more that season. It arrives in St Kilda early in May, and departs towards the latter end of June.

2. Gannet, or solan goose.* This bird constitutes the principal wealth of the people of St Kilda. He is rather smaller than a goose; builds his nest and rears his young only on a few uninhabited islets in Scotland, such as the Bass in the Firth of Forth, the rock of Ailsa in that of Clyde, and the St Kilda islets. It is said that he also builds in some rocks in Orkney and Shetland. In the months of March and April the solan geese are innumerable around St Kilda. Upwards of 20,000 are annually consumed by the natives, besides an immense number of eggs. In September and October they leave St Kilda, and direct their course southward, where they are met with as far as the mouths of the Tagus and Guadiana.

The solan goose is seldom known to fly over land; but when he meets with a promontory or island, he generally makes a circuit, and keeps himself above the water of the sea. Hence the vulgar tradition, that he cannot fly out of sight of the ocean, but would instantly fall down if he did not smell the sea.

3,

* Pelicanus Bassanus, Linn.

3. Fulmer, or fullumar, is the next in importance to the gannet : it is a species of gull, which supplies these islanders with oil for their lamps, down for paying their rents, food for their tables, balsam for their wounds, and a medicine for all their distempers, besides acting as an infallible barometer ; for while these-birds keep the sea, the people of St Kilda are certain of good weather.

4. Lámhi, or guillemot. This bird is nearly as large as a duck, and yields, both by its eggs and flesh, a large portion of food to the natives. It is also a barometer, and keeps the sea only in good weather:

5. Falk, or razor-bill, is somewhat smaller than the lámhi, and its eggs and flesh are equally esteemed with those of the former.

6. Buigir, or coultarneb, is smaller in size than any hitherto mentioned, but more are taken of them than of all the rest put together.

DESCRIPTION

DESCRIPTION DES ISLES HEBRIDES,

PAR D'ARFVILLE, 1540.

A costé d'Escosse de la part d'Occident en la Mer Hibernique, sont les isles que Pline a nommées Britanies, et autres Meuanies, et Hebrides : Boetus en conte 43, mais il y comprend l'Isle de Man, qui souloit appartenir au Duc d'Albanie : ainsi qu'en font foy les armoiries de la dicte isle qui sont les memes d'Albanie, assavoir trois iambes d'hommes armezayans les esperons aux piedz, encores que le Roy d'Angleterre la possede. La premiere de ces Isles Hebrides, et la plus proche d'Escosse est Arana, ainsi appelée des Latins ; mais des modernes Aran, qui est Conté : en icelle y a une si haute montaigne que de la sommite d'icelle estant le temps clair, lon void aisément l'Isle d' Hibernie, ou Irlande, encores que la distance soit du moins de 40 mille, Botte, ou Butte, Elavv, et Rothesa : et non loing de là est Ailze, petite isle abondante en oyseaux solans. La plus fertile de toutes est Yla, abondante en froment et metal. Apres suit Combra, et Mula, et ioignant icelles Iona, celebrée pour les sepultures des anciens Roys d'Ecosse. Puis Evvist, Levvis, et Skie, qui sont les plus grandes, Colle, Cannay, Rum, Egge, Muk, Scarbo, Rona, et autres escriptes par ordre en la Carte Johannes Major en nomme quelques vnes ainsi, Argila. Aranea, Au-
uina,

uina, Botta, Rothsaya, et Lesiuora : en ces isles sont des oyés qu'ils appellent Clakis, ou Clecz, Siluius Gerardus les nomme Bernacas, Boetus assure qu'elles viennent de la mer, et de la pourriture du Bois, et non naissantes des arbres, comme escriuent la plus part des modernes. Car (dict il) si on gette du bois en ceste mer par succession de temps on y voit premier naistre des vers dans le bois caué lesquels peu à peu prennent teste, pieds, esles, et en fin gettent de la plume, et ainsi deuenues grandes comme oyés s'en volent en l'air ainsi que les autres oyseaux. Entre Bervvick et le petit Lyth deuers L'Orient en la Mer Germanique, y a vne petite isle, non trop esloignée de la coste d'Ecosse, qui est nomme par les Escossois l'Isle de Bas, et des François l'Isle des Magots, qui est un rond rocher de mediocre grandeur : en laquelle abonde si admirable quantité d'oyseaux solans, que le seigneur de l'Isle (n'y ayant aultre reuenu que de la chasse et prinse d'iceux) en tire tous les ans de toute ancienneté, 600 Escuz de ferme. Nous viendrons maintenant aux Orchades, ou Isles d'Orcknay.

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